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ABSTRACT

This environmental education curriculum guide was developed for teacher use at the junior high school level. Although the guide deals with the socio-cultural aspects of the environment, it is designed to encourage an integration of the disciplines into an inter-disciplinary approach. The volume consists of a set of ideas, activities, and opinions which will help teachers and students generate a positive approach to the environment. The guide is divided into the following seven units: Earth Thoughts, which examines various viewpoints of man's relationship to the environment; Quality of Life, which encourages the student to examine and evaluate his life goals; Environmental Inventory, which deals with the processes of research, observation, evaluation and organization; Environmental Management, which examines how one's community deals with concerns related to environmental management; Environmental Politics, which looks at environmental realities; Community Problems, which examines the functions of a community and its problems; and Futurism, which considers the stress of technological change. Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences and references. The experiences of each unit are based on an objective which relates to the subject of the unit. Several activities are included in each experience. (TK)

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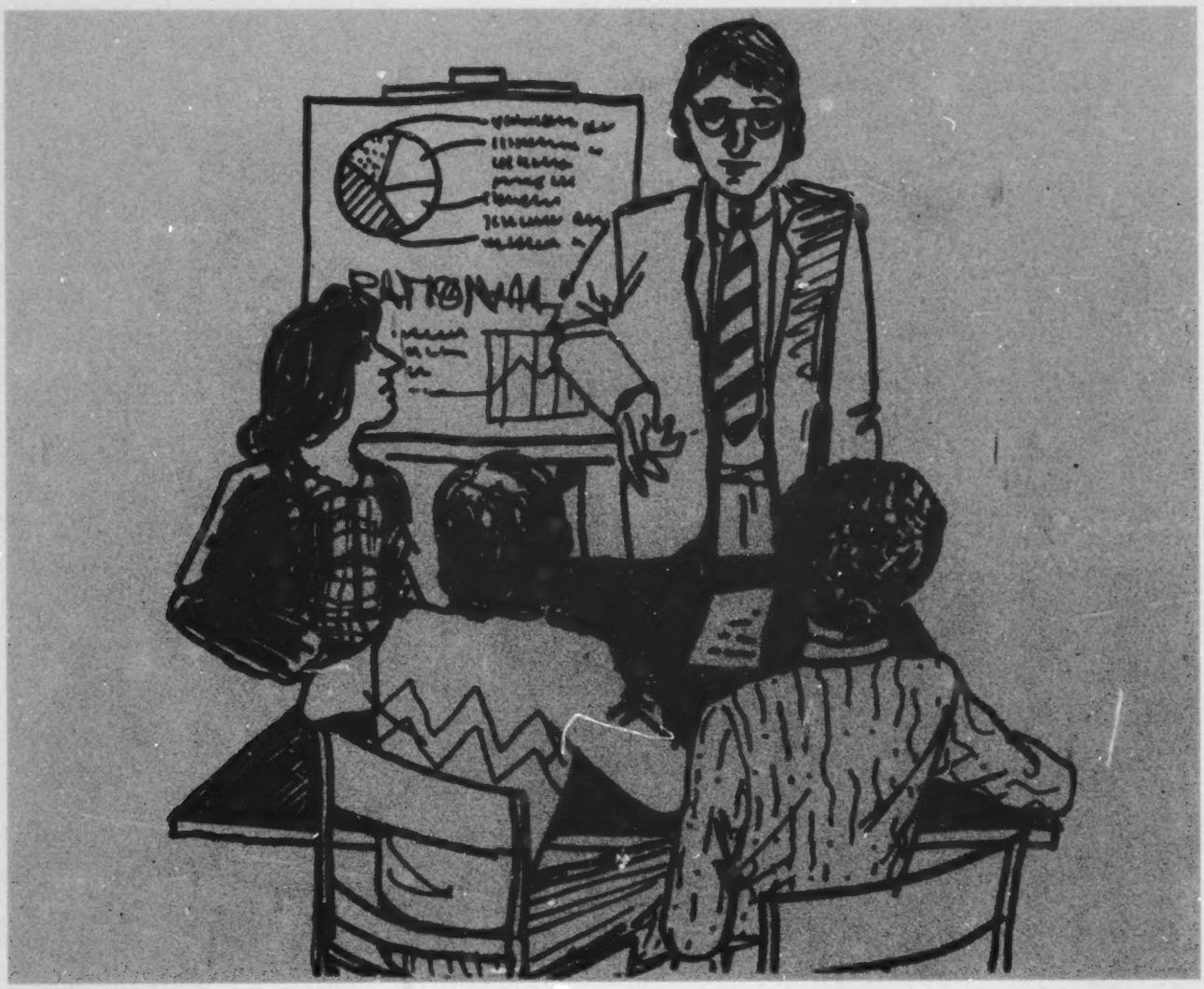
Environmental Learning Experiences

Socio-Cultural Junior High School



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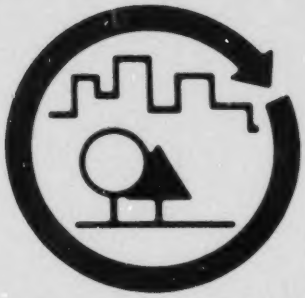

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INTRODUCTION

> Here is this vast, savage, howling mother of ours, Nature, lying all around, with such beauty, and such affection for her children, as the leopard; and yet we are so early weaned from her breast to society, to that culture which is exclusively an interaction of man on man - a sort of breeding in and in, which produces . . . a civilization destined to have a speedy limit.
>
> *Henry David Thoreau*
> (Bode, Carl (ed.), "Walking." Viking Portable Library, p. 621)

Environmental education is an integrated educational process which is only beginning to become a part of our educational institutions. What environmental studies there have been, have been relegated largely to science and elementary teachers, as ecology. The path of ecology (a word popular only since *Silent Spring*) is a noble one, but often unsuccessful in its attempts to create an environmental awareness that is vitally needed to turn our growing environmental dilemmas around. The environmental movement, if it can be called such, is already laced with comfortable cliches and a bumper sticker commerciality which is making hay while the spirit of Naderism rides high, as if taking advantage of a fleeting public fancy. Well-meaning environmental groups are experiencing financial and legislative setbacks, a result of an apathy fostered by ignorance, social-cultural pressures, and a mindless economy, spawned by the superficial concept of goodness in growth.

If environmental education is taken per se, we have been engaged in the process since our ancestral beginnings. But within a very short space of time, the lessons of the environment have been lost, or fall on ears that can no longer hear. We have been steadily engaged in a flight from our real environment to an artificial one. This has been due to a faith in technology that has been blind, and demonstrated to be without limits or qualifications. This is one important reason why environmental education should be a total interdisciplinary approach which focuses upon the means of bringing us back in touch with the real environment. It should be an education which permits the experience of feeling ourselves as an intricate, inescapable part of the web of all life. We must recognize that we function within a delicate balance that requires a caring concern for life and gentle attitudes about the earth that will make us worthy stewards of the land.

Man is a part of the environment, as is the most insignificant form of life, and must derive his basic needs from the same tenuous flow of energy which sustains our entire ecosphere. He has adapted in accordance with the great constructors of change — the environment and heredity — and has met the rigors of survival to the point where his success has become dominion. He has engaged, through his superior intelligence, in an inexorable technocracy which has removed him beyond the realm of real contact with the web of life itself. For these reasons he has altered the environment more than any other living thing.

The significance of our life-ties to the earth has been diminished with the superficiality of plastic and throw-away cultures enraptured with mindless growth. Our tin can technology is in evidence even in mid-ocean. The limits seem to be at hand and a new philosophy, armed with meaningful understanding of the problems we face, is imperative.

It is important that those who have inherited our problems will be able to take a total world view of our deteriorating environment and be able to detect and sift through the obstacles that seem to shackle our present efforts because they will inherit the responsibility of providing solutions. Environmental education can not be approached from any one discipline but must draw upon the entire spectrum of man's ability to express his feelings and throughts. Science is one means of perceiving and interpreting our environment but it is useless without confronting the political, social-economic aspects and empty without the richness of art, philosophy, poetry, and music which have spoken eloquently of man's relationship to the earth.

The Center for the Development of Environmental Curriculum has developed a set of volumes which gives the teacher an opportunity to draw from many disciplines in an effort to bring environmental education to our institutions through as many avenues of learning as possible. The CDEC curriculum volumes have been written by environmentalists and educators from as many areas of education as possible. Each unit may be utilized separately or in conjunction with other units. Although each volume represents a particular theme in a certain area and level (e.g. Earth Thoughs - Biophysical - Senior High), the entire curriculum is designed to encourage an integration of the disciplines into an inter-disciplinary approach. The volumes may be used also, as supplementary guides to activities in any area. It is hoped that the volumes can be viewed as a flexible set of ideas, activities, and opinions which will help teachers and students generate ideas and activities into meaningful educational experiences. They are resources which will enable those who use them to develop a way of thinking and feeling about nature, and it may provide the chance to help clarify our environmental values into sound models for action.

We are in the midst of environmental problems which leave us confused and frustrated in the maelstrom of pros and cons concerning our dilemma. That we are experiencing a steadily deteriorating environmental condition is beyond any doubt. The solutions are not easy. But if you have experienced the flow of water, fresh and cold over your body as it courses through some green mountain valley on its way to the sea, knelt in the cool, damp earth and clutched its rich smell to your face, or watched a Blue Heron in slow flight at sunset, you know it is worth saving. All the care, concern, and love for all life and its necessary place within the intimacys of our "tiny spaceship" is in those knowing moments. At those times we are in touch with the ages of all life's experience. Man is the only creature capable of contemplating his own death; only man can develop an environmental ethic that is futuristic and healing.

Ronald J. Yarian
Concerned Educator and Citizen

EARTH THOUGHTS

The purpose of this unit is to provide the student with an opportunity to examine various viewpoints of man's relationship to his environment.

The era of diminishing resources, increasing consumer demands, and growing concern about environmental quality has put modern man into a position of confronting values.

Todays students need to examine various perspectives of the environment in relation to their own environmental values. A method of determining how others view the environment is exposure to various environmental viewpoints through films, lectures, essays and poems. These are important sources of thought-provoking ideas, but they may limit the students to a one-sided approach. Therefore, this unit would like to offer other methods and activities that will lead the student to experience and become aware of many views about the earth. First hand experiences as well as reading and film viewing were included. Teacher preparation time, class time, resources, student skills, interest, and setting were also taken into consideration.

Teaching units sometimes tend to stress only those views and values supported by the school, the community, and the commercial power structure. Evaluating the thoughts of those who have a medium for expression ignores the general public, who may have the greatest stake in the environment. Everywhere we look we can find examples of ordinary people expressing opinions and values about their environment.

After looking at what the environment means to a variety of people, the students can then begin to examine their own beliefs and develop values toward their environment.

INSTRUCTIONAL OBJECTIVES:

The experiences and activities in this unit are designed so that:

1. The student will have an opportunity to examine and clarify the terms and realities he views as the earth, the environment and nature.
2. The student will pinpoint what he considers to be his environment and to determine his feelings toward it.
3. The student will clarify his understanding of the terms, the natural environment and the man-made environment.
4. The student will have an opportunity to interpret the meanings of the words, "earth," "environment," and "nature" through various media.
5. The student will have an opportunity to express and examine his conscious and unconscious feelings about the earth and his environment.
6. The student will have an opportunity to compare his feelings with the feelings and actions of those people closest to him.
7. The student will probe the reasons behind his positive and negative feelings about the environment in light of his values.
8. The student will explore his feelings and viewpoints of different economic, educational, and geographic areas.
9. The student will have an opportunity to examine the current views about the earth as seen in the popular media.
10. The student will have an opportunity to compare his viewpoints with those of environmentalists of the past and present.
11. The student will examine the use of the concept "concern for the earth" in commercial advertising and its significance.

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EXPERIENCE #1:

ARE WE SPEAKING THE SAME LANGUAGE?

OBJECTIVES:

1. The student will have an opportunity to examine and clarify the terms and realities he views as the earth, the environment, and nature.
2. The student will pinpoint what he considers to be his environment and to determine his feelings toward it.
3. The student will clarify his understanding of the terms: the natural environment and the man-made environment.
4. The student will have an opportunity to interpret the meanings of the words "earth," "environment," and "nature" through various media.

Teacher's Note:
We think that because we are all speaking the same language, we are communicating. Language and the ability to speak are two of the greatest gifts possessed by man, but just being able to talk is not the answer to understanding. Beacuse of the varied backgrounds, life styles, cultures and races of Americans, speaking a word to another person does not always mean that you have been understood. The following activities are designed to help the student become aware that words they consider common can have many different meanings. The realization that there are differences will be valuable in later activities when they are asked to examine other viewpoints and attitudes.

ACTIVITY A:

Teacher's Note:
The following word could be used in a "word association game" with no emphasis on a "correct answer." Discussion of differences and value of each word could follow.

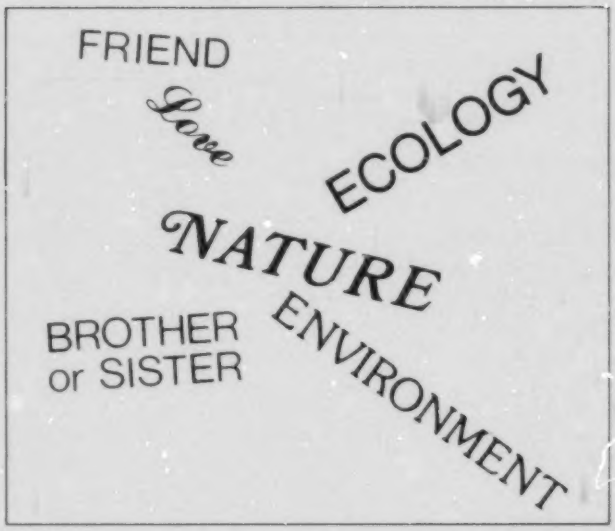
Some of the most popular words today deal with the earth and a concern for it, yet these words have a multitude of meanings. The meanings referred to are not the Webster Dictionary type but real everyday meanings in common usage. Have the students try to define some of the following words not using a dictionary and compare the results.

love
environment
friend
ecology
the earth
community
brother or sister
nature
understanding
soul
a fool

Materials:
A dictionary (if you desire)

ACTIVITY B:

Teacher's Note:
Some prior preparation is needed to complete this activity.



Have the students consider the word "environment" further by means of pictures. Perhaps students can illustrate different meanings. For example, have some of the students take pictures of the "man-made environment" and others take pictures of the "natural environment". Display the pictures in the classroom and have each student explain what is included in his definition. Don't tell them of the two distinctions and see if they discover any differences there may be.

Materials:
Inexpensive cameras and film, art materials, pictures
Note: One such inexpensive camera is the Snapshooter. It is a small lens attached to a replaceable film cartridge. They cost only $1.00 plus $.50 for handling.
Snapshooter Camera Company, Division of Plastics Development, Corporation of America, Post Office Box 16225, Philadelphia, Pa. 19114.

ACTIVITY C:

Teacher's Note:
Discusss real, *not* artificial *or* manufactured, *in connection with the word "natural."*

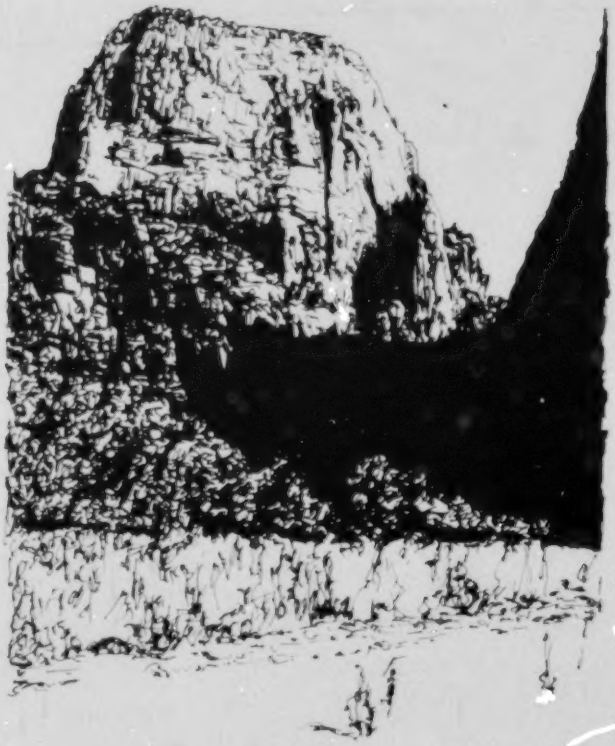
Consider the meanings of the word natural, an adjective. What does it mean to be a natural? Or to call someone a natural fool? Or to say to someone, "Naturally, I'll do it"?

ACTIVITY D:

Teacher's Note;
Perhaps a team of reporters can do several reports dealing with "natural" versus "man-made" environment, then lead into class discussions.

Discuss the location of the natural environment and the man-made environment. Is the natural environment always far away, only to be found in the country or in some national park? Or is there a natural environment in the city? Is there ever an all man-made environment?

MAN-MADE



NATURAL

ACTIVITY E:

Teacher's Note:

Have the students judge each others pictures with either an "S" or a "U" (satisfactory or unsatisfactory interpretation of their definition).

Using a dictionary or thesarus, describe *your* environment, using as many adjectives as you can. Secondly, discuss *your* environment using only nouns. (Example: tree, grass, soil.) Compare your descriptions with another student's. Exchange descriptions and try to illustrate that description, using pictures or drawings. Does their picture match your description and the feelings you have for *your* environment? Try it another way - view a picture of a location or visit a neighborhood, and then go back and write a description of it. Compare your descriptions. Do your impressions match the other person's?

ACTIVITY F:

Teacher's Note:

There are two possible follow ups to this activity.

1. *The students can be asked to write a paper after reading the story, taking one position within the "Willowly Tree" or the "Pole." Which is the most important? Which is the most useful?*
2. *Students can write a paper on "What is progress?" What is the primary concern, building a shopping center or cutting down trees? What are the alternatives?*

If possible read the following short story and discuss: "The Fair Young Willowy Tree," by A. E. Coppard, in the book *Eco-Fiction*, edited by John Stadier. For complete bibliography reference, see the bibliography.

EXPERIENCE #2:

HOW I FEEL ABOUT THE EARTH

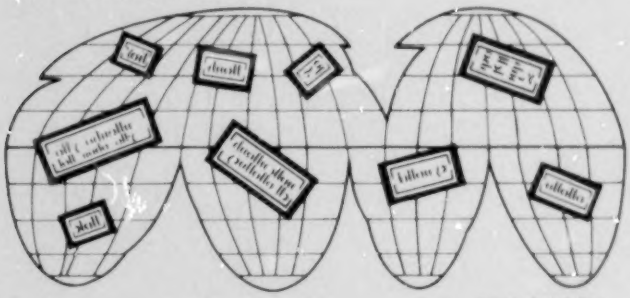
OBJECTIVES:

1. The student will have an opportunity to express and examine his conscious and unconscious feelings about the earth and his environment.
2. The student will have an opportunity to compare his feelings with the feelings and actions of those people closest to him.
3. The student will probe the reasons behind the positive and negative feelings he has about the environment in light of his values.

ACTIVITY A: GRAFFITI

Teacher's Note:
Keep in mind that you may have some problem with undesirable remarks on the sign. Perhaps they might be inked out, if you desire, or dealt with as an expected occurrence and the reasons they were put there discussed.

IN THE YEAR 2000 . . .



. . . THE EARTH

Tape a blank piece of newsprint or any other type of paper on the classroom wall or use a blank blackboard. Write one of the following phrases on the paper and let the graffiti happen.

The Earth is . . .
In the year 2000 the earth . . .
Earth Thoughts . . .

After a few days, when the paper begins to fill up, examine the graffiti. How do the statements run? Are they positive or negative? Discuss the different views. If the class desires, try the same idea in a school hallway or in the school office. Compare the graffiti; are the comments similar?

ACTIVITY B:

Teacher's Note:
This activity is best done by individual students or small groups.

Have the students illustrate how they feel about the earth with a slide show. Either use regular film slides or make your own, using clear contact paper and magazine pictures.

Materials:
Pictures, words and diagrams from magazines, clear contact paper, water in bowl, empty slide squares.

How To Do It:
Cut out pictures or words you wish to make a slide of. The pictures must fit into the slide holder and be seen in the opening. Cut pieces of clear contact paper the same size as your picture. Peel off the back of the contact paper and mount your picture. Using a spoon or other hard object, gently press out the air bubbles. Then drop your square into clear water and, after a few minutes, remove from the water. The paper should easily slide or rub off the contact paper, leaving the picture. When the slide is dry, mount it in the empty slide square. Since the contact paper will still be sticky, you can mount on it another piece of contact paper, stick-sides together, thus making a dustproof slide. You can also draw or write on the clear contact paper, using magic markers. Be sure to write on the sticky side. Larger transparencies and "stained-glass windows" can be made the same way.

ACTIVITY C:

If you want to do something really exciting, try this idea, originated by the Eco-Box people in Toronto. Buy an Army surplus parachute very cheap, and borrow as many slide projectors as you can. Even one will do. Also borrow a record player and some mood music. Hang the parachute from the ceiling, using the strings to form a huge bowl shape. Place the slide projectors at different intervals around the parachute and focus them toward the chute. Have several students crawl into the parachute (through the hole at the top of the chute, which is now on the floor). Then begin your slide show and music. It offers a marvelous feeling. Show pictures of the sea and you feel like you are a part of it. If you can't get a parachute, use a completely empty room and focus on all four walls.

ACTIVITY D:

If the class has decided that there is a difference between *the* environment and *my* environment, have them describe their own environments. List the components (my house, street, the neighbors, the corner store, etc.) and portray their environment using photos or drawings. Relate your feelings about your environment. Is it a good environment? A bad environment? Why? What must be added to make it a good environment? Removed to make it a good environment?

ACTIVITY E:

Make posters illustrating your feelings about the earth. (For example, personal feeling posters, like the Let It Be Me posters). Display them in school halls and then hang around them and listen to people's reactions and comments. Students can cut pictures out of magazines and make posters in class. Students should be prepared to explain the meaning behind their posters: "Let It Be Me"

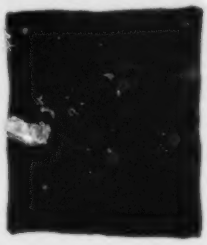
HOW TO MAKE A SLIDE

1. Cut out small pictures that are slide size - 2" x 2".

2. Cut out 2" x 2" pieces of clear contact paper.

3. Mount picture on one side with contact paper.

Picture

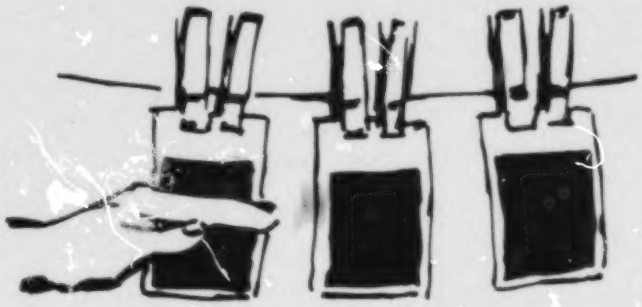


Contact Paper

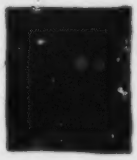
4. Soak contact-picture in water for a few minutes.

5. Remove from water - paper should easily rub off leaving color on contact paper.

6. Dry pictures by hanging or on paper - sticky side up.



7. Seal sticky side of picture using another 2" x 2" piece of contact paper. Then mount in slide holders.



Contact Paper

Contact Picture

Mount in slide holder

ACTIVITY F:

Make up some short rank-order or forced choice questionnaires and administer them to your students. Design the questions so that the students, when answering, have made some decision about how they view the earth or their environment.

Example 1: A rank order questionnaire

1. Which group would you prefer to join?
   - ☐ young people for clean air
   - ☐ recycling junk for reuse
   - ☐ let's put fish back into our streams
2. What disturbs you most?
   - ☐ polluted streams
   - ☐ factories bellowing smoke
   - ☐ garbage dumps
3. If you had no choice, which could you tolerate most?
   - ☐ noise pollution
   - ☐ sight pollution
   - ☐ air pollution

Example 2: A forced-choice questionnaire

Which would you prefer?

1. Hoe or tractor
2. Broom or vacuum cleaner
3. Cabin or tri-level house
4. Horse drawn carriage or automobile

Have students discuss the reasons for their choices

Example 3: A survey questionnaire

Surveying People & Community: Environmental Questionnaire

Mark one: ☐ Male ☐ Female

1. What type of home would you prefer?
   - ☐ Ranch
   - ☐ Mansion
   - ☐ Apartment
   - ☐ None
2. What size home would you prefer?
   - ☐ 1 to 4 room
   - ☐ 5 to 10
   - ☐ 11 to 15
3. Where would you prefer your home to be?
   - ☐ Country
   - ☐ Suburb
   - ☐ City
   - ☐ Small town
4. In what type of community would you prefer to live?
   - ☐ segregated
   - ☐ integrated
   - ☐ doesn't matter
5. What is your occupation?
   - ☐ business
   - ☐ laborer
   - ☐ housewife
   - ☐ professional
   - ☐ student
   - ☐ other (specify)

6. What is your occupational rank? (Choose one or more)
   - ☐ company president
   - ☐ v.p. or manager
   - ☐ foreman
   - ☐ laborer
   - ☐ other (specify)
   - ☐ employer
   - ☐ employee
   - ☐ owner
   - ☐ none
7. Where would you like to work?
   - ☐ City
   - ☐ Suburb
   - ☐ Small town
   - ☐ Country
8. Where do you work?
   - ☐ City
   - ☐ Small town
   - ☐ Suburb
   - ☐ Country
9. With which would you rather work?
   - ☐ animals
   - ☐ people
   - ☐ natural resources
   - ☐ machines
10. What is your approximate income?
    - ☐ 0 to 4,000
    - ☐ 5,000 to 8,000
    - ☐ 9,000 to 14,000
    - ☐ 15,000 or more
11. What economic class are you in?
    - ☐ upper
    - ☐ middle
    - ☐ lower
12. Which animals do you have?
    - ☐ cat
    - ☐ dog
    - ☐ horse
    - ☐ none
    - ☐ other

13. How many people are there in your family?
    - ☐ 2-3
    - ☐ 4-6
    - ☐ 7 or more
14. If you were President, which would you give the highest priority?
    - ☐ space program
    - ☐ urban renewal
    - ☐ research on pollution control
    - ☐ education
15. Which do you think should be cleared up first?
    - ☐ energy crisis
    - ☐ food shortage
    - ☐ war
16. What would you do to curb the food shortages?
    - ☐ grow your own garden
    - ☐ eat less
    - ☐ nothing
    - ☐ other
17. What is your solution to the energy crisis?
    - ☐ gas rationing
    - ☐ turn down thermostat
    - ☐ drive slower
    - ☐ all of these
    - ☐ none
18. If you could, what would you change in our town?
    - ☐ recreational areas
    - ☐ industrial areas
    - ☐ commercial areas
    - ☐ residential areas
19. Do you think automobile makers should use only:
    - ☐ new steel
    - ☐ use only recycled steel
    - ☐ look for more plentiful material
20. What kind of energy research should be carried on?
    - ☐ electricity
    - ☐ fuel
    - ☐ nuclear power
    - ☐ solar power
21. If you could, what would you do?
    - ☐ clean up waterways
    - ☐ stop the wasting of natural resources
    - ☐ build more recreational areas
    - ☐ other (specify)
22. What do you think is the worst problem?
    - ☐ pollution
    - ☐ slums
    - ☐ over population
    - ☐ drugs
23. Have you done anything to help preserve the natural environment?
    - ☐ yes
    - ☐ no

ACTIVITY G:

Have each student write or describe what he would do if he had a million dollars. Many of the responses will deal with making changes in their life style and environment. How does this relate to whether they view their environment as good or bad? Students may also write on "My Perfect Environment" or "How I Changed My Environment to be a Perfect One."

ACTIVITY H:

Consider whether you could live without the earth. (Work for the realization that the earth supplies everything we have.) Try to list the raw materials of all the objects in your classroom. What are your results? Is there really any man-made object?

ACTIVITY I: POETRY

Try writing some simple haiku or cinquain about your earth thoughts. It is really not that hard.

Haiku

Haiku is a three-line, seventeen-syllable poetic form that paints a verbal picture of an experience. Often the poem describes something we may overlook or take for granted. A haiku is the poet's way of conveying his innermost feelings about the world around him. Because the poem is short, the reader must supply much of the meaning through his own past experiences. Each poem is like a pencil sketch that the observer may fill in with color or meaning. Each word that is used has a purpose. No word is used unnecessarily. A good haiku is hard to write, because the poet must combine acute perception, creative use of words, and a framework for the reader to re-live an experience based on a few suggestive phrases. Often the poet depends heavily on his senses of touch, taste, smell, sight, and hearing to convey his reactions. The writing of haiku can develop attitudes and appreciations about man's relationship with the immediate surroundings, best accomplished when the writer is in direct contact with nature and reality.[1]

[1]Cliff E. Knapp, Environmental Education Coordinator, Ridgewood Schools, Ridgewood, New Jersey

A contemporary form of haiku follows:

3 lines - 17 syllables
- 5 in the first line
- 7 in the second line
- 5 in the third line

Cinquain

Cinquain is a direct description of one thing, whereas haiku is the transmitting of a feeling that an experience gives. If you ask the students what it would be like to be snow, a haiku is probably more appropriate; if you asked them to describe snow, perhaps they should write a cinquain. Both forms are similar, however, in that they are descriptive of one thing at a time.

The structure of a cinquain follows:
First line: a single noun (person, place, thing)
Second line: two words describing the noun
Third line: three words describing the noun
Fourth line: four words describing the noun
Fifth line: five words, completing a sentence that began with the noun in the first line.

Example of cinquain:

Rain
Wet, clear
Soft, cool drops;
Sprinkles splashing, showers growing,
Seems so nice to me.

ACTIVITY J:

Teacher's Note:
If you can't get outside, have students do the activity at home or substitute magazine pictures.

Using materials that you find outside (natural and man-made), show how beautiful your environment is, how ugly, how happy, how sad, how peaceful, how violent, and so on.

ACTIVITY K:

Teacher's Note:
Students can work in groups. Making collages might be a good way to show this.

What evidence can you give that your environment is changing? Do you feel that it is changing for the better or the worse? How can you help or stop the change in your environment?

Making Collages

ACTIVITY L:

Is your environment comfortable? uncomfortable? cold? friendly? What factors make up your environment that affect your feelings toward it? How do people affect your feelings about your feelings concerning your environment?

EXPERIENCE #3:

A BROADER LOOK AT EARTH THOUGHTS

OBJECTIVES:

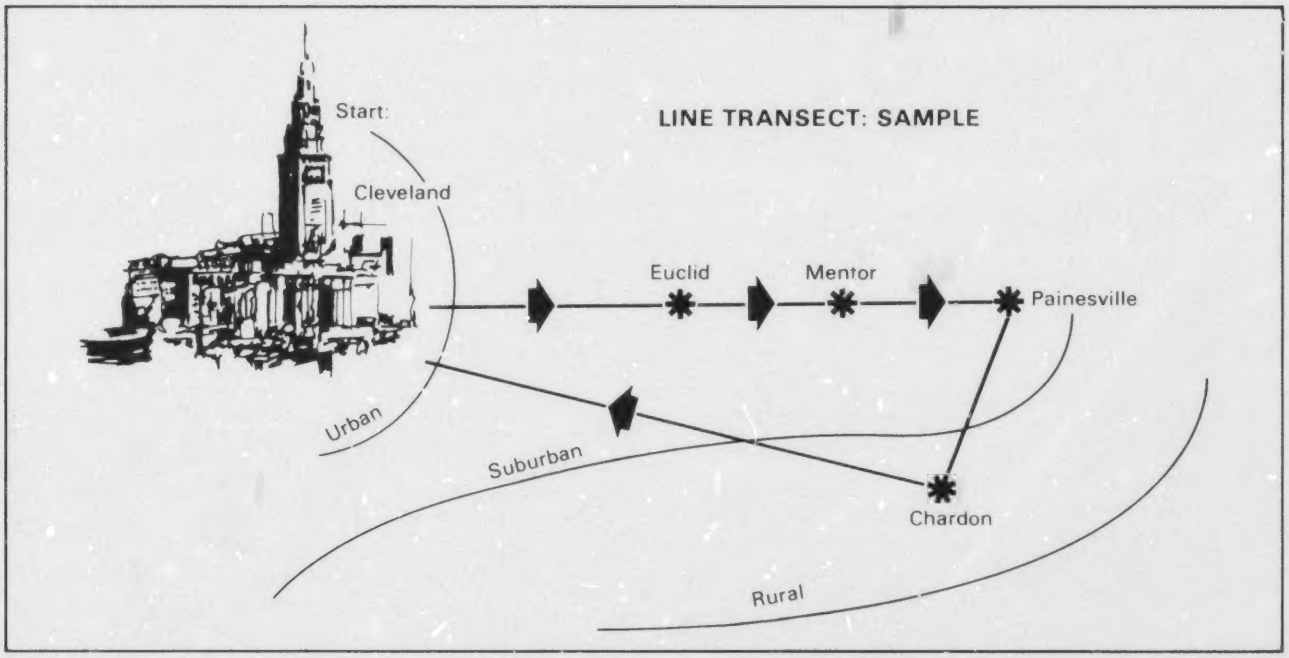
1. The student will explore his feelings and viewpoints of difference economic, educational, and geographic areas.
2. The student will have an opportunity to critically examine his own values about the environment.

Teacher's Note:
The method that will be offered for examining the environment and the people who live in it is the line transect-random sample. A line transect is an ecological method of obtaining date about a community.

This section is based on an activity that involves the student in interviewing and recording data from various people along a route that transects a series of heterogeneous communities.

ACTIVITY A: THE LINE TRANSECT METHOD: PROCEDURES

1. Using road maps, air photos, topographic maps, or any other pertinent data, try to determine the location of various types of communities in your area. This can encompass the diversity in one community or cover a wide variety of communities.
2. Select the communities or community to be studied.
3. Determine a route (transect) that crosses the greatest diversity of community types. A macro-community might include a farming area, a farm town, a city satellite, a rural area, a new suburb, an old suburb, a residential area, or an affluent area. A micro-transect could include within one community the business section, residential area, industrial park, affluent residential area, new housing area, and a poor area.
4. Determine the feasibility of the route of the transect. Consider such factors as availability of sites for random sampling, traffic conditions, industrial hazards and community hostility. If any factor renders the transect infeasible, seek a solution to the problem or find a new transect route. Although the transect is the base for the sampling, allow latitude and flexibility to include close by sites for sampling.
5. Discuss the activity with the administration to insure their understanding.
6. Determine the sites for sampling. At some of the sites, the students may want to record only their own impressions; at other sites they may want to interview residents, merchants, workers, other students, etc. If any of the sites are on private property (i.e. a supermarket), explain to the manager of the property what the activity is about. While sampling sites are being deter-



mined, slide photoes can be taken of the sampling areas. The slides will be used to introduce the students to the activity and determine their own environmental attitudes prior to the activity.

7. Set the dates for the activity, and secure permission and transportation if needed.
8. Discuss with the class the objectives of the activity and its relationship to their values about the environment.
9. Using a questionnaire developed by the class, determine their attitudes about the environment where the sampling will take place. Explain that attitudes are neither right or wrong. The purpose of the attitude survey is to determine the change in the students attitudes after talking to people with different viewpoints. The questionnaire is to be used in conjunction with a slide presentation of the various interview sites. The same questions should be discussed for each slide.
10. Have the class form task groups for the sampling.

    The tasks: *Eye Balling* — Recording visual impressions with cameras, video tape recorders, sketches, prose, or poetry

    Ear Drumming — Recording how the site sounds, using tape recorders or writing

    Interviewing — Recording what other people feel about the sampling sites and the environment

    The tasks can be rotated at each sampling site.
11. Develop the questionnaire to be used at each site. (See EXPERIENCE #II, Activity F, for a sample questionnaire.) Ask the students to determine what they need to know in order to evaluate other people's values. See bibliography for help in constructing a questionnaire.
12. Practice interview techniques, emphasizing not only what to ask but how to ask it. Practice your teachings and questionnaires on other students and teachers. Be sure students follow through on statements made by the person being interviewed.
13. Have the students become familiar with any equipment they will be using.
14. Conduct your line-transect.
15. Organize the information you have gathered. The students may want to devise a system to tabulate the interviews, looking for key words or phrases that can provide clues to the trend of the interviews. The Ear Drum and Eye Ball material could be put together into some sort of display or multi-media presentation and be shown to the class or other groups. The students should try to evaluate the data for insights of what it is like to function in the various environments tested. Compare the answers for similarities and differences. Does *your* environment or surroundings affect your view of the earth and the environment? Could you tell from your transect? If not, why not?
16. Repeat the pre-trip slide presentation. Have the students compare their before and after viewpoints of the various environments. Did their viewpoints change? Why? Are they more or less tolerant of other viewpoints?

EXPERIENCE #4:

A MUCH BROADER LOOK
A LOOK AT THE MEDIA

OBJECTIVES:

1. The students will have an opportunity to examine the current views about the earth as seen in the popular media.
2. The student will have an opportunity to compare his viewpoints with those of "great" environmental writers of the past.
3. The student will examine the use of the concept "concern for the earth" in commercial advertising and its significance.

Teacher's Note:
In this experience, the students will be given the opportunity to examine the viewpoints and opinions that are currently being expressed in the popular media of today. They will also be able to compare these viewpoints with those of past "environmentally minded" writers and to examine their own viewpoints in relation. Since reading level is variable in any class, books on different reading levels will be recommended.

ACTIVITY A: DOES VOLUME EQUAL CONCERN?

Examine several popular old magazines and count the number of times the words "earth," "environment," "a concern for the environment," or "ecology" were used. Do the same with a current magazine. Use two similar magazines, for example, two news magazines or two woman's magazines. Does this mean people are more or less concerned about the earth today or is the "ecology movement" a fad and a good way to sell a product? For a comparison do the same with some other so-called "fads" or "issues," such as women's lib, credibility, etc. Compare your results.

ACTIVITY B:

Take a poll of what types of products are using "a pitch for ecology" approach. What evidences can you see that the companies are using this approach only as a sales method. Examine the companies' policies to see if they are really using "environmentally sound" practices. Note whether any of the new "crises," such as the energy crisis, are being used in the same way. This activity may be concluded in a report or chart.

ACTIVITY C:

Compare pictures of different park or yard settings. Find pictures that show "neat" formal gardens versus those gardens that are left to spread on their own. What do these pictures tell you about the owner, his culture, and his views about the earth. Do the same with different house styles. What does it mean if a person has a house with lots of windows but air conditioning? True, the people didn't build the house, but they did choose to live in it. What does your house say about how you view the earth?

ACTIVITY D:

Alvin Toffler, in his book, *Future Shock*, discusses the throw-away society. He feels that the American public is fast becoming enamored with the idea or perhaps indoctrinated to believe that new and temporary things are the answer to concern with material possessions. He states that the "spread of disposability in our society implies decreased durations in man-thing relationships and a foreshortening of our ties with the physical environment."

Discuss how this event will affect our views of the earth and material possessions and the use of natural resources. Explore the evidence of the throw-away society in your classroom. Examine how long various products last or are expected to last or even to be kept.

Example:
ball point pens
magazines
combs
books
shoes
coats
automobiles

ACTIVITY E:

If possible, read parts of the following books to your class or have the students read what they can. See the bibliography for complete references.

Future Shock by Alvin Toffler
A Sand County Almanac by Aldo Leopold
The Wounded Earth by Carl Marzani
Eco-Fiction by John Stadler (ed.)
Walden by Henry D. Thoreau
America the Raped by Gene Marine
Different Kind of Country by Raymond Dasmann
Design with Nature by Ian McHarg
Quiet Crisis by Steward Udall
Man and Nature by Marston Bates
Crisis in Eden: A Religious Study of Man and Environment by Frederick Elder
Gentle Wilderness by John Muir and Richard Kauffman
House with 100 Lights by Clifford D. McElroy, Jr.
A God Wtihin by Rene Dubos
Wilderness and the American Mind by Roderick Nash
The Environmental Revolution: A Guide for the New Masters of the World by Max Nicholson

ACTIVITY F:

Examine and read any accounts of people (true or fiction) living alone in the wilderness for some time. Investigate their feelings about the earth and nature. Did their feelings change? Did their attitudes depend on whether they were successful in remaining alive or well?

Some suggested books:

Two on a Island by Biance Bradbury (Grades 4-6)
Call It Courage by Armstrong Sperry (Grades 5-7)
Snowbound by Renee Aurembou (Grades 3-6)
Adventure in Survival by Maurice Bear (Grades 7-9)
The House of the Bittern by Pamela Ropner (Grades 5-9)
Cougar by Peter Thompson (Grades 5-8)
Island of the Blue Dolphines by Scott O'Dell (Grades 7-9)
Five Days of Living with the Land by Sarah Brown (Grades 7-9)

ACTIVITY G:

View some of the current movies and film strips on the condition of the earth and views toward it. See the bibliography for some recommended films.

ACTIVITY H:

Investigate the feelings and policies of some of the current environmental groups and associations, such as The Sierra Club, the National Wildlife Federation, and the Issac Walton League. How do their views differ? How do your views compare with theirs?

ACTIVITY I:

Obtain a copy (or as many as you can) of the new World Almanac for the current year and read and use as many of the articles and charts as you can. What happened last year in the United States and how did this affect the environment? Compare the increases in types of industry and the money spent; how did this affect the natural resources of the United States?

ACTIVITY J:

Read any of the following people's work:
Henry David Thoreau
John James Audubon
George Perkins Marsh
John Wesley Powell
John Muir
Gifford Pinshot
Aldo Leopold
Other environmentalists

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FILMS:

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The Green City. 27 minutes, color, sound. Problems of urban land development and the need for conservation measures. Motion Picture Library, USDA Soil Conservation Service, 7600 West Chester Pike, Upper Darby, PAA. 19082.

The House of Man: Our Crowded Environment. 11 minutes. An astute view of the effects of overcrowding on an environment. Encyclopedia Britannica Films.

Multiply — and Subdue the Earth. 60 minutes. The principle of total ecological planning applied to problems such as who should decide and how do we decide where residential developments should be located. Indiana University Audio-Visual Center.

Our Land, Its Many Faces. color, sound, 14 minutes. Conservation based on Thomas Jefferson's farming ideas. Motion Picture Library, USDA Soil Conservation Service, 7600 West Chester Pike, Upper Darby, Pennsylvania, 19082.

Peace and Voices in the Wilderness (BFA). 10 minutes, color, 1969, $4.10. Photographic essay on the difference between what life is like and what it ought to be like. Shows idyllic and essentially peaceful nature of life in the wilderness. Over these scenes are the sounds of riot, assassination, and other indications of man's crimes against himself. Sharp sense of counterpoint serves to stimulate discussion on the effects of and resolution for some of society's major problems. The Pennsylvania State University, Audio-Visual Aids Library.

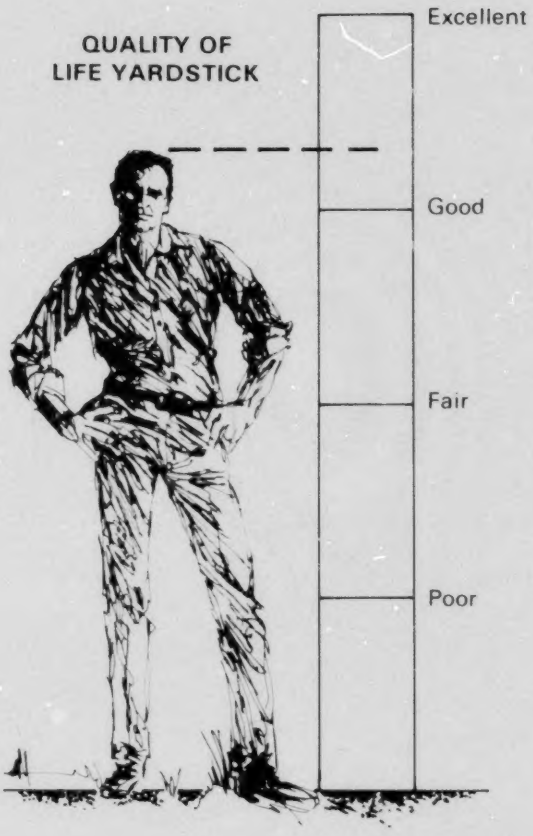
QUALITY OF LIFE

Quality of Life as a unit is designed to provide the student with a personal yardstick. It is to be his personally developed measuring device with which to evaluate himself and others in terms of life goals. Moreover, the unit's purpose is to challenge the sincerity of the student's declared life goals as he states these life goals. In pursuing other activities related to environment in the units to follow, the student will have his self-determined set of values as a basis for making choices and arriving at conclusions. Finally, the unit's purpose is to demonstrate the interrelationship of the student's goals to those sought by others.

The framework of the unit is designed to maximize usage of materials that every teacher now has in lesson plan books, file folders, and curriculum guides. Among materials not only available, but which are known to be classroom tested and educationally valid, are activities related to Quality of Life.

INSTRUCTIONAL OBJECTIVES:

1. To help the student begin to examine his life goals and objectives.
2. To help the student examine his life goals in comparison with other goals.
3. To have each student identify those characteristics he feels contribute to a quality life, both physical and mental.
4. To have each student examine his material wants of a lifetime in terms of his willingness and ability to obtain them.
5. To have each student examine the non-material aspect of "the good life" in comparison with his life goals.
6. To have students determine and examine their material wants and needs in realistic terms.
7. To have the students consider whether these wants are worth the effort to attain them.
8. To have students determine how important these nonmaterial needs are in reaching for the "good life."
9. To have students examine the effect of others on every individual's goals and in turn the effect of that individual's drives on others.
10. To have students examine the affect of their wants on the environment.
11. To offer the student a glimpse of life styles other than his own and to determine how lifestyles affect the physical environment.
12. To have the student re-examine life goals, wants, and needs in light of environmental considerations.



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EXPERIENCE #1:
LIFE OBJECTIVES

OBJECTIVES:

1. To help the student begin to examine his life goals and objectives.
2. To help the student examine his life goals in comparison with goals of others.
3. To have each student identify those characteristics he feels contribute to a quality life: physical and mental.

Teacher's Note:
The following activities may be conducted as total class projects, in small groups, or under individual student contract.

ACTIVITY A:

A LOOK AT MY LIFE - INTRODUCTORY ACTIVITY

1. *"What would I do with the rest of my life?"*
Have students write their thoughts about what they would do with the rest of their life if they had all the money they would need for a life-time.

Some points that could be considered are:
a. educational goals
b. travel
c. purchases and investment: homes, cars, stocks and bonds
d. activities and hobbies: sports, theater, opera, music, surfing, sailing

2. *Write an epitaph or obituary.*
The activity may sound grim. It need not be. Refer to bibliographic resources for hints on establishing a mood compatable with learning.

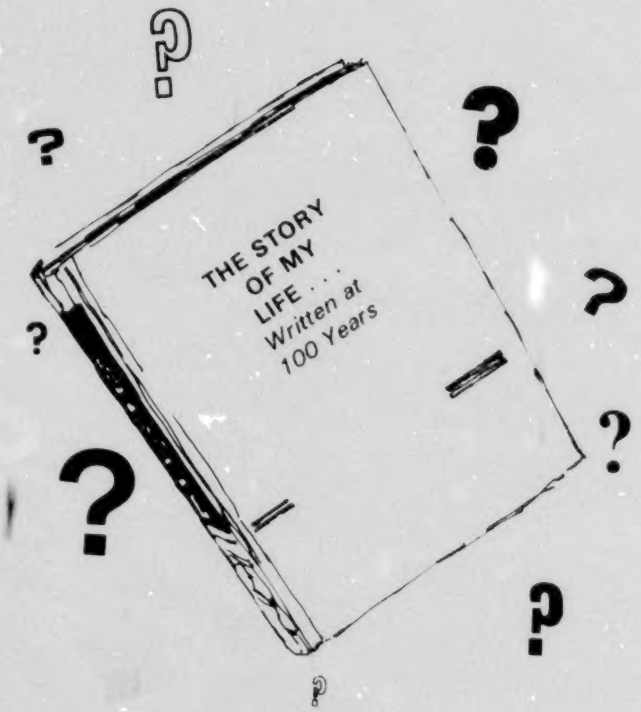
Have the students write their own epitaph or obituary. Distaste for the acceptance of man's ultimate fate may be overcome in several ways. For one, point out that if anyone in the room should shrink from the task, it is the teacher since the likelihood of leaving is greater for adults than children.

Two, read good humored last words. Edmund Gwenn, famed for "Miracle of Thirty Fourth Street," replied when a friend said, "This must be very hard on you Edmund. . ." "Not as hard as playing comedy." Gertrude Stein, John Barrymore, and many others made great parting shots.

Three, have the students role play a death scene from a cowboy or gangster movie.

Whatever the introduction, best results have been achieved by having the students write the final form as homework. Obits are preferred, with epitaphs accepted from the less literate.

The immediate follow up, of course, is to hear the thoughts of the students. Without exception, past groups of all ages and educational levels have expressed a desire to be remembered as "kind". Beyond this one word, it is noteworthy that,considering the long run, people opt for virtue over riches and even over fame.



3. *Autobiographies at age 100*
Have students write their autobiographies at age 100 or some other age that would motivate students to consider the future.

Before the assignment, have a brainstorm discussion centered around questions similar to the following:

a. What things do you want to accomplish in life? (Focus on education, career, travel, etc.)
b. What things would you like to have attained before you die? (Focus on material needs.)
c. Name character traits that you most want to be remembered by (traits such as good friend, honest man, good parent, etc.).

ACTIVITY B:

LIFE AS VIEWED BY THE LOCAL COMMUNITY

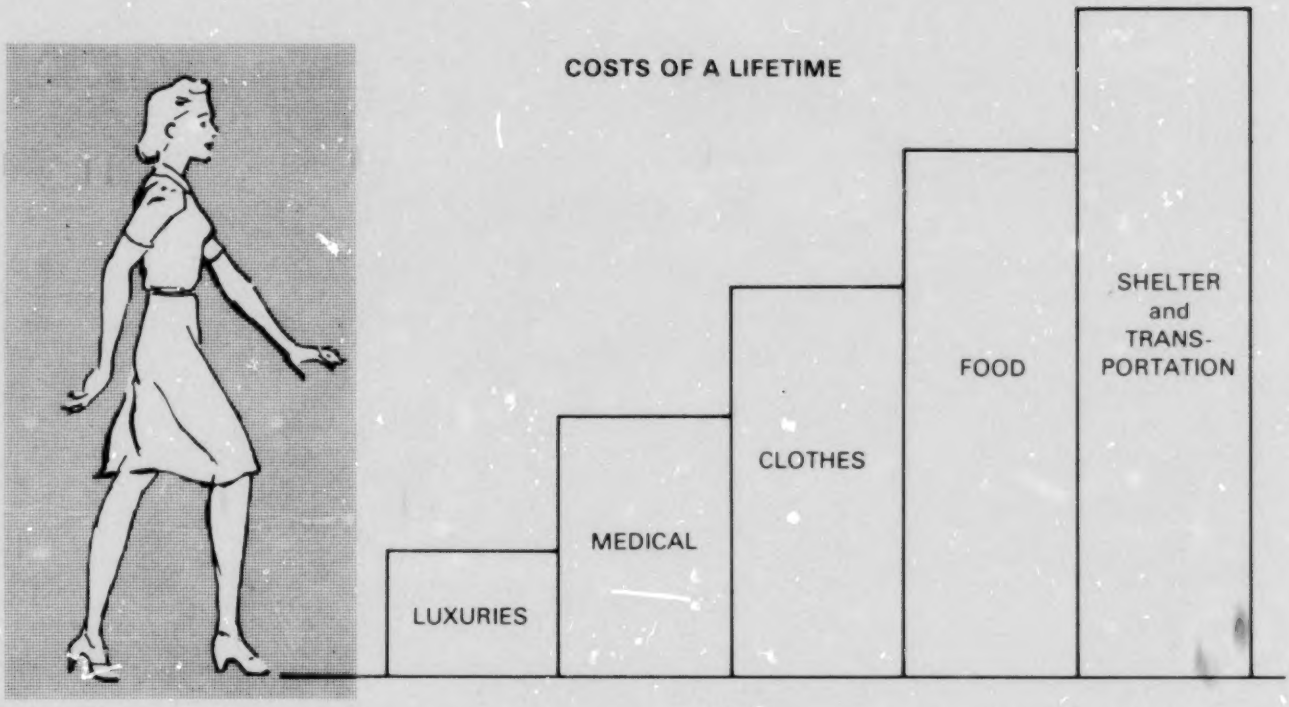
From current newspapers, read obituaries of local people. Have students analyze the eulogies. Does each describe the person or does it list groups and organizations to which he belonged? Why is this approach taken by the newspaper? Would the student change it, and if so, in what way?

Materials:
Local newspapers

ACTIVITY C:

LIFE AS VIEWED BY THE NATION AND HISTORY

1. Have the students write the obituary of a well known person on the national scene: Richard Nixon, Shirley Chisholm, Frank Sinatra, a current pop singer.



2. Have them write the obituary of a famous historical villain, such as Adolf Hitler or Genghis Khan, as they would have had they been on the scene or as they would have were they his parent, girl friend, or best buddy.
3. Have students report on final days and funerals of famous men: Martin Luther King, John F. Kennedy, Abraham Lincoln.

Materials:
biographies
newspapers
magazines
books
history books

ACTIVITY D: LIFE VALUES

1. Have students as a total class write "Everyman's" obituary. Are there things that Everyman would like said of him as he leaves the earth? OPTION for students: Write the obituary of Everyman or write why it is impossible to speak for Everyman. How much discussion should take place before leaving the student to his wrap up activity is, of course, an individual judgement by the teacher.
2. Have students demonstrate visually Life Values for every man.

   a. Have students draw pictures that illustrate life values.

   b. Have students cut pictures and captions from newspapers and/or magazines that illustrate life values, and make a poster or collage.
3. Graffiti
   Tape a blank piece of paper on the classroom wall or use a chalkboard.
   Write the phrase "The Good Life is. . ."
   Allow students to develop the graffiti.

Teacher's Note:
Keep in mind that you may have some problems with undesirable remarks on the sign. You may ink them out or deal with it as an expected occurance and discuss in class the reasons they were put there.

Materials:
Newsprint or large paper
Magic markers

EXPERIENCE #2:

THE WAYS AND MEANS OF A LIFETIME

OBJECTIVES:

1. To have each student examine the material wants of his lifetime in terms of his willingness and ability to obtain them.
2. To have students determine and examine their material wants and needs in realistic terms.
3. To have the students consider whether these wants are worth the effort to obtain them.

Teacher's Note:
The following activities may be conducted as total class projects, in small groups, or under individual student contract.

ACTIVITY A:
HOW MUCH DOES IT COST TO LIVE A LIFETIME?

Using the question "How much does it cost to live a lifetime?" should stimulate some immediate response. Without attempting to classify or categorize replies, responses would be written as students are encouraged to brainstorm. Let discussion follow any direction it will, students can be challenged to reduce the problem to some manageable order. Example: How long is a lifetime? Refer the students to any almanac to find information provided by HEW on *Average Future Lifetime in U.S.* Sixty years becomes a manageable, accurate figure.

Since there are potentially a large number of variables, two considerations are important to note. One, the process through which the students delimit and define the problem is of tremendous value in itself. Two, for purposes of this unit, predetermined items and complex "weight" factors need not restrict the fun aspect of estimating. A "ball park" figure determined by some appreciation of two main categories, necessities and "other" is workable. The first day's homework of listing items under necessities and "other than necessities" is an excellent point of departure.

ACTIVITY B: THE NECESSITIES OF LIFE

The development of a chart may help the student define those services and materials needed to have a comfortable life in our culture. A sample type of chart is offered here. Have your students develop their own chart or adapt this chart for your use. Some suggested necessities have been entered. The figures of 3000, 720 and 60 for weekly, monthly, and annually purchased items and services should be determined by the students, since understanding activities to follow is tied to a proper understanding of these figures. Which items are to be considered weekly expenditures, monthly expenditures, annual cost items, or occasionally purchased items should be made clear.

Example: If a person's food expenses were $50.00 per week, then in a lifetime he would spend 3000 x $50. or $150,000 for food.

The chart on this page does not include many categories of expenditures, of course, but it can serve as a model. Health care might include a monthly aspect for health insurance plus "several in a lifetime" items for operations, dental care, etc.

ACTIVITY C: HOW MUCH MONEY?

For each of the items on the chart, a group researches newspapers and consumer publications to determine best buys and roughly estimated costs.

Materials:
Catalogues, newspapers, consumer reports

NECESSITIES	3000x weekly	720x monthly	60x annually	Several in Lifetime	Gross Cost
Food					
Shelter					
Clothing					
Health care					
Automobile					
Auto Oper.					
Auto Maint.					
Major Appli.					
Recreation					
				Grand Total	

ACTIVITY D: OTHER PROBLEMS TO BE SOLVED

When a cost figure is determined for the delimited items in terms of the current year, other questions should likely be considered. It is probable that students will have raised them in the initial question's consideration. If not, the teacher may want to introduce any or all of the following:

1. What about retirement plan costs?
2. How will inflation likely affect prices in that 60 years?
3. What changes in taxes may be anticipated?

ACTIVITY E:
WHAT CAN I DO TO EARN THE AMOUNT I ESTIMATE I'LL NEED?

Predictable cost for living a lifetime is $450,000 to a half million. Keeping the estimating moving is important since the variables can become the game. Once some figure has been pegged to the satisfaction of most of the class, the attention is then shifted to the other side of the coin.

"What can I do to earn the amount I estimate I'll need?" Continue brainstorming and delimiting factors: "Thirty and Out," "Never Want to Retire." Again, a ball park figure of $15,000 plus for thirty years of work is the likely outcome of earning need. Is earning this amount realistic? Must I earn more? Settle for less? Where can I reduce spending, increase earning? Are there just too many variables? What items that I now want may be obsolete? What new "necessities" are part of most people's lives that didn't exist 10, 20, 30 years ago? More questions may be raised than answered. Many are material for a debate in modified form.

Materials:
Information on occupations today and in the future
Insurance forms and plans

ACTIVITY F:
A NUMERICAL RATING OF LIFE VALUES

1. Using the list of material wants and needs the students have compiled, develop a numerical rating system as to their importance. For example, have the students rank order those things that they feel they cannot do without.

Sample Rank Order:

Air (clean)
Water (clean)
Food
Warmth (heat, clothing, shelter)
Eye glasses
Tools
Books
Friends
Car

Next, have the students compile a list of those objects that they feel make their life have quality.

Sample Quality List:

Books
Money
Big car
Lots of clothes
Cigarettes

Compare the two lists. What demands do the second list make on first list? If I own a big car and everyone else owns a big car, what will this do to the quality of the air? What are some other quality wants that affect needs? What are luxuries? When is a luxury more important than a need?

2. Have students make value judgments about themselves. Using the following questions or madeup ones suitable to your class, and have students rank their choices 1, 2, and 3.

If you had $20., what would you do?
- ☐ buy records
- ☐ invest it
- ☐ buy clothes

What should your tax money be spent for?
- ☐ slum clearance
- ☐ medical research
- ☐ care of the aged

Which would you rather do?
- ☐ collect papers for recycling
- ☐ walk in a march against a polluting factory
- ☐ get signatures to force a car salvage to fence in its ugly yard.

Which is most important to you?
- ☐ clean air
- ☐ nice home
- ☐ personal possessions

Which would you rather be?
- ☐ rich and lonely
- ☐ poor and happy
- ☐ rich and unhealthy

EXPERIENCE #3:
HUMAN NEEDS - NON-MATERIAL

OBJECTIVES:

1. To have each student examine the non-material aspects of "The Good Life" in comparison with his life goals.
2. To have students determine how important these non-material needs are in reaching for the good life.

Teacher's Note
The following activities may be conducted as total class projects, in small groups, or under individual student contract.

ACTIVITY A: A SOCIO-DRAMA

Without writing any actual lines or speeches for the students, set up the following situation for their role play: Their host at a party lets them (about six guests) know that they will be joined shortly by a person who is terribly unhappy. There is something that this person does not have. They are to try to find that which is depressing him. *All* of their questions *must* try to discover some *material* want! No food? Poor clothing?

The guest replies that he is doing fine materially. His diet is rich, his clothes expensive, home luxurious, cars magnificent, etc. But after answering each question in this vein, he repeats that he is miserable. When all have asked their questions and the activity is wearing thin, have the class, including the drama participants, finish the drama. Discussion may or may not precede the written completion of "The Guest Was Miserable Because. . ."

ACTIVITY B: MONEY EQUALS HAPPINESS

Is it possible to be unhappy or apparently unhappy with a billion dollars? Describe Howard Hughes reclusiveness without naming him as a billionaire who is apparently unhappy. Have students speculate as to what his problems might be.

ACTIVITY C: SUCCESS IS?

Have students write or report to the class on one of the following:

1. Either side of the statement, "A life, to be considered a successful life, must have a goal or a series of goals."
2. A report on the life of a person whose life they regard as successful.

ACTIVITY D:
THOUGHTS AND CONCLUSIONS ABOUT LIFE

1. Before continuing the development of the personal yardstick, a discussion regarding conclusions reached and questions still to be resolved is in order. It is essential not to force any conclusions on the students. Rather, how they now

feel is important to the emphasis of the activities to follow. Pump primers to aid students in summarizing their thoughts to date may include these:

a. Do people live their day to day lives with a lot of thought about their total life purpose?

b. Do you agree material considerations are a large part of man's approach to life?

c. Are man's material seekings the whole purpose of his life? The major consideration of his life?

d. Do you live for today or for tomorrow?

e. Are you prepared for the future? In what way?

2. Have students reevaluate their life values by completing the following statement: "What I would do with the rest of my life." Have the student write his thoughts after informing him that he has just won a lottery guaranteeing him $15,000 per year for life, with a cost of living feature built in.
3. Have students state their life values by completing the following statement: "With the rest of my life I will seek to. . ."

EXPERIENCE # 4: A MILLION LIFE GOALS WHO WILL REACH THEIRS?

OBJECTIVES

1. To have students examine the effect of others on every individual's goals and in turn the effect of that individual's drives on others.
2. To have students examine the effect of their wants on the environment.

Teacher's Note:
The following activities may be conducted as total class projects, in small groups, or under individual student contract.

ACTIVITY A: INVOLVEMENT! A SOCIO-DRAMA

Three students are given the following roles: storekeeper, parent, buyer (child). Class is asked to witness a simple transaction. Parent hands child money and tells child to go to the store for a loaf of bread. Child enters store, asks for bread, pays, receives change. Child returns to parent announcing transaction complete. Class is then asked, "How many people were involved in that transaction?" Write a number. The response is usually 3. Repeat the drama, using three new actors. Then ask, "Were all of the people involved necessarily present?" Repeat drama. Then ask, "Name at least two people not present who were involved." Ultimately the class sees that the delivery man, the baker and finally hundreds of others are involved. As responses drag, ask, "Are all of the involved people living in the U. S.?" People in nations who contribute raw materials are now included. Finally, "Are all of the involved people still alive?" This [illegible] up known and unknown inventors and discov[illegible] including he who first used fire for cooking. S[illegible]iography for suggested resources and background.

ACTIVITY B: HOW WANTS AFFECT OTHERS

Have a student name something he wants materially, such as a bike, a shirt, or a blouse. Have him write whether the following people would be affected by his trying to obtain it, and if so, how. Family, friends, classmates, school authorities, local authorities, other Americans, people of the world, etc. should be considered.

Now ask how these same groups can help or hinder his attaining his goal.

The above need not involve a material pursuit, but rather an action-oriented goal. For example, breaking a speed record or getting a position in the band.

ACTIVITY C: WANTS VS. ENVIRONMENTAL COST

Have students list 10 things they want most. Have them answer the following questions about their 10 things:

a. Is it made from a non-replaceable resource?

b. Does its production harm any part of the environment?

c. Will it be a future polluter?

d. Will other people be hurt or helped by your ownership?

Wants	Replaceable Resource	Harmful Prod. Process	Future Polluter	Others Hurt	Others Help	Is it really worth it?

ACTIVITY D:
THE DAY THAT THE POWER PLANTS AND THE GOVERNMENT FAILED TO OPERATE

Teacher's Note:
You may wish to extend this to more than one day.

Have students write an account of their day under this title: "The Day that the Power Plants and the Government Failed to Operate." Exactly what is meant by this assignment must be explained. On awakening, the student finds out that the lights, gas, water and government services are at a standstill. WHY AND HOW THIS HAPPENED ARE NOT IMPORTANT AT THIS TIME. Students immediately want to speculate about invasions from outer space or any of a hundred "creature" or "monster" explanations. While these are fascinating, the problem of how they would meet the dilemma is thereby ignored. Students are asked to keep a log of their day: how they bathed, ate, and spent their time, how the streets looked in their neighborhood, how neighbors behaved toward each other. Hundreds of students have ended their essays with "And then I woke up..." Facing this assignment without the Marines landing to slay the monster is a new experience for most students.

EXPERIENCE #5:
LIFE STYLES AND THE QUALITY OF LIFE

OBJECTIVE:

To offer the student a glimpse of life styles other than his own and to determine how life styles affect the physical environment.

Teacher's Note:
The following activities may be conducted as total class projects, in small groups, or under individual student contract.

ACTIVITY A: LIFE STYLES OF THE PAST

Looking at historic life styles that differed can probably best be accomplished by traditional research and oral/written reporting. The following are examples only. You may wish to change these or add others:

Amish or Mennonite, Amana, Shaker, Quaker, Mormon, and Doukhobor social beliefs can readily be discovered. Observation of the first mentioned group is often possible in Ohio. It is important to stress at the outset that HOW these societies were structured is the important thing. Debate about validity of the religious aspect must be referred to an out-of-school advisor. The life styles of different historic periods can also be researched. For example, what was life like for an Egyptian ruler? Peasant? For a pioneer in the early 1800's? For a soldier in Napoleon's army? For 1949 cattle ranchers? For coal miners? For industrialists? For American Indians?

What kind of demands did these life styles make on the physical environment? Did these demands on the environment have a positive or negative effect for those people who would follow them in the future?

ACTIVITY B: CURRENT AMERICAN LIFE STYLES

Teacher's Note:
This could be done by means of a socio-drama.

1. Investigate some current life styles in America today. Read, discuss, and inventory people about their feelings about their life style. Are they satisfied with their life style? Do they view their life style as ordinary, daring, unusual? Here are some suggested current life styles the students may wish to investigate: middle-income suburban, industrial worker, inner city, "hippie," back-to-the-land farmers, and many others.
2. Investigate current life styles within given areas and show how these styles affect the physical environment. Examples: cities, farms, fishing communities, mining towns, isolated tribal communities, etc.

   Questions to be considered might be these:
   a. What demands does the life style make on the water supply, air, natural resources?

   b. Does this style destroy a part of the environment that can never be replaced?

   c. What effect will this life style have on future people who might wish to live in this area?

Materials:
current magazines
encyclopedias
history books

EXPERIENCE #6:
TIME AND THE QUALITY OF LIFE

OBJECTIVE:

To have the student re-examine life goals, wants, and needs in light of environmental considerations.

ACTIVITY A: STUDENT ACTIVITY DIARY

Have the students keep an activity diary from the time that they arise until they retire, in half-hour segments.

Time	Yes/No	Code	Activity
7:00-7:30			

The assignment does not explain the *Yes/No* or *Code* columns at the outset. The student fills in the activity: bathed, ate breakfast, talked with friend Jane Doe, etc.

The class session on the day that the assignment is to be turned in considers these blank spaces as follows:

Yes — if others were involved in the activity

No — if activity was devoid of any dependence on others

Code —
A = family or friend involvement, personal
B = classmates, storekeepers, casual small group involvement
C = school officials, government officials, large impersonal group involvement

Of course, Yes activities might call for codes A, B, and C with two or more involved.

Final consideration of completed diary. A written conclusion by the student may be in order as he sees the pattern of his activities with regard to others. An alternative is to have the time periods of various kinds of involvement placed on a bar graph by the student.

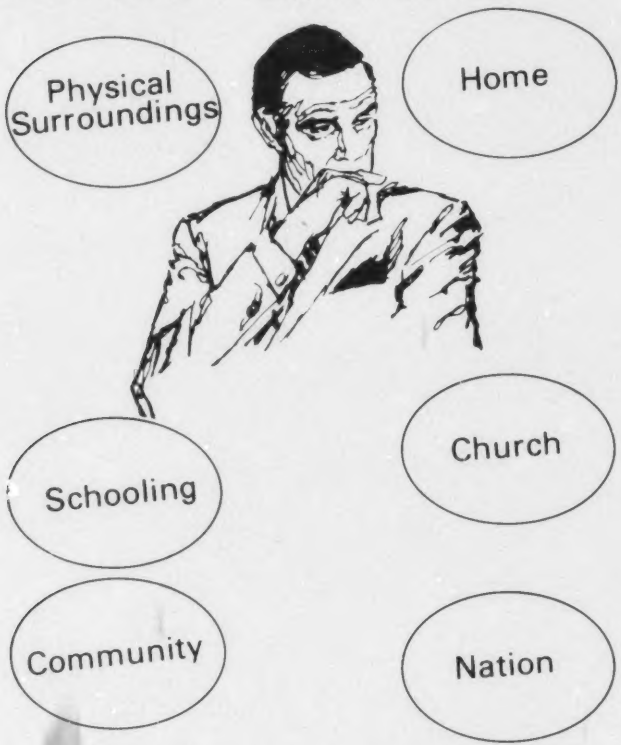
ACTIVITY B: CAN ANYONE BE A HERMIT?

Write a life plan for a man who wants to keep his involvement with others to a minimum. Where would he live? What would he do to survive? What work would he do, if any?

ACTIVITY C: THE INDEPENDENT MAN

Research and write about the "independent" men of the past, such as Henry Thoreau, Jim Bridger and other mountain men, or World War II soldiers who have recently discovered the war is over.

See Bibliography for suggested references.



ACTIVITY D: MY LIFE — QUALITY

1. John Donne wrote, "If a clod be washed into the sea, it diminishes me." Ask students to comment on this thought as a final exercise in examining Quality of Life.
2. Rewrite your epitaph, list of life goals, and life necessities again. Students need not reveal these statements. Have they changed? What now are the important values, goals, needs? How does your life style meet these? What can you do to change your life style so you have a quality of life?
3. Have students restate their life values, remembering that "no man is an island" and "no man really dies."
   a. report form
   b. poster
   c. collage

Materials:

posterboard
pictures
magazines
glue
scissors

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ENVIRONMENTAL INVENTORY

We are living in an age of profound and rapid change. Values and institution, technology and the environment are in a state of flux. For perhaps the first time in man's history he is faced with the hard reality that his environment is finite.

In order for man to survive, it will be necessary for him to understand himself and his relationship with his environment more fully and adjust his lifestyle(s) in accordance with that understanding.

As teachers, we have the responsibility to facilitate this process of understanding. This unit is offered as a possible guide to meeting this goal. Through a series of topics, activities, and alternatives, the student will be aided in developing a greater awareness of his immediate environment, his community.

This unit is student action oriented, the students becoming involved in the processes of research and observation, organization and evaluation.

This unit may be used intact, or in parts, or as a "springboard" in the development of the teacher's own unit.

Because the junior high years are often confusing for the student because of new situations, feelings, and an insecurity about self, a unit dealing with community involvement and contacts may seem threatening. To help overcome this fear the first phase of this unit is designed as a proving ground for the inventory. In it, the students can test out their inventory skills before trying them on the community.

The second phase of the unit extends its range to the community and is presented as a series of goals and concepts with a variety of activities designed to accomplish the objectives.

Inventory is a method — a tool — not the end product. Because of the wide range of maturity in junior high school students, this unit ranges from developing the student's environment to the structuring of a basis for further problem-solving activities.

INSTRUCTIONAL OBJECTIVES:

1. The student will develop an awareness of the communities to which he belongs.
2. The student will increase his own power of observation to take an inventory of his immediate environment, the classroom.
3. The student will develop methods of collecting, interpreting, and evaluating data about his community.
4. The student will collect and analyze date concerning his next larger environment, the school.
5. The student will set his own standards for his researching of a community if the contract method is used.
6. The student will observe his village, town, or city and make relevant value judgements regarding that community and its components.
7. The student will research a community and will distinguish between positive and negative aspects of said community.
8. The student will develop a greater awareness of the many social, cultural, economic, geographical, and political factors which make up the community.
9. The student will develop methods of research and data collection.
10. The student and the class will evaluate results of research and analysis.
11. The more mature student will make a judgement about his responsibilities to both the positive and negative aspects of communities.

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EXPERIENCE #1:
COMMUNITY AWARENESS

OBJECTIVES:

1. To involve the student in an inventory of his own knowledge (awareness) of his community.
2. To understand the term "community."

Teacher's Note:
To begin this unit, an activity to get the students involved immediately is needed. Awareness *is the keyword of any introductory activity in community study. If one is not aware and observant, much of one's community's action will pass one by. Awareness of the community starts on different levels. One could begin with an awareness of school or community.*

ACTIVITY A:

This is a survey (or pre-test) to determine the student's level of community awareness. Questions should relate to the geographic, economic, social, and political makeup of his community. Questions should fit the locale of the student.

Sample Questions:

1. What is the name of your village, town, or city?
2. In what county do you live?
3. Describe the land form.
4. Is there a playground in walking distance from your home?
5. Describe your winter weather. Summer.
6. Is there a lake near you? Name it. How far away is it? A river? Name it. How far away is it?
7. Have you or a member of your family ever fished in the lake? The river?
8. Do you know the name of your mayor? Your city manager? Which does your community have?
9. Is there a shopping center near you?
10. Is there public transportation other than school buses?
11. How often is the garbage collected on your street? Does the city government insist that glass, tin, and burnables be separated?
12. Do few, many, or most of your neighbors have a garden? Flower? Vegetables? Both?

ACTIVITY B: WHERE AM I GAME

The teacher may initiate all or part of the questions; however, it might be wise to get students involved in this process.

Sample Question:

1. "I am standing at the intersection of two streets. I am facing north. To the northeast is a brick gas station and automobile dealership. To the southwest is a large white house. To the northwest is a white funeral home. Where am I?"

ACTIVITY C:

The teacher may wish to introduce this lesson with a discussion of the word "community." One possible avenue might be to look at and compare the following words and their meanings: communicate, commune, community. This might be followed by a discussion of the students' membership in the following communities:

1. Community of man
2. Family
3. Religious community (i.e., Christian, Jewish, etc.)
4. Ethnic/racial community
5. School, classroom
6. Local-county, city, neighborhood
7. State
8. Nation
9. World community

ACTIVITY D: MAP EXERCISE

Students are to draw a map of their neighborhood or community showing at least five major points or locations of interest (i.e. their house, the school, church, city hall, playgrounds, woods, etc.).

ACTIVITY E:

Teacher's Note:
Maps will be discussed in detail later in the unit (Experience 2, Activity C).

Using the rough maps, see how many street names and neighborhood names the students can fill in. Put an X on the location of the homes of the students. Discuss what landmarks are and how these might be important to a mapmaker or to a stranger in town. Have the students draw in any landmarks they use. Also have them compare their maps and discover if there are any streets or alleys they have never been on in their town.

EXPERIENCE #2: BECOMING AWARE OF THE CLASSROOM COMMUNITY

OBJECTIVES:

1. The student will define the limits of a community.
2. The student will develop an understanding of the meaning of the term inventory.

ACTIVITY A:

How aware are the students of the classroom in which they spend many hours in every week? Blindfold several students and see how many questions they can answer:

1. How many desks in the classroom?
2. What color is the floor? The walls?
3. How many windows are in the room?
4. Is there a fire extinguisher in the room?

Ask any other questions that are pertinent.

What is the outcome of the test? Are the students aware of the physical surroundings of the classroom? Were they more aware of the community or the classroom surroundings?

ACTIVITY B:

Discuss how the students could become aware of the classroom. What immediate tools do they have available? Every student can immediately use his own senses. Draw up a list of the sort of observations that can be made in the classroom using the senses.

Sample list:

Sight:
- color
- number
- shape, etc.

Hearing:
- background noise (furnace, etc.)
- people talking
- outside noise, etc.

Smell:
- perfume
- smells associated with particular materials (example: wood, chalk, ditto fluid, etc.)

Touch:
- temperature (relative)
- texture, etc.
- drafts

Taste:
- food

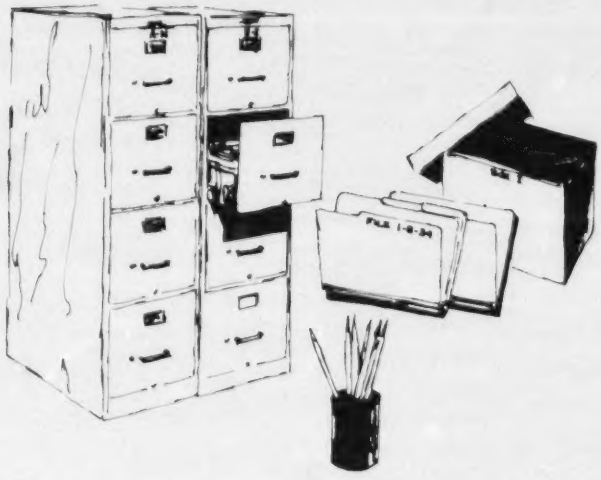
Now discuss what cannot be experienced using the senses. This may be a little more difficult; a few hints might be exact temperature, height, weight, personal feelings, compass direction, etc.

ACTIVITY C:

Another method for becoming more aware of the classroom is the use of mapping. Discuss what purposes a map of the classroom might serve. (Direction, for use in decorating, etc.)

What is a map? What tools and equipment would be needed to map the classroom? Discuss scale and the corresponding size of the map. See Appendix A for background on mapping. Using suggestions from the appendix and the students, map your classroom.

Materials:
Paper, pencils, rulers, tape measures, compass, etc.



ACTIVITY D:

In conjunction with the classroom map or in its place, inventory the contents of the classroom. Discuss the type of data you could possibly obtain. Discuss how the contents could be classified and put into categories and the value use of this information.

Sample classification system #1:
Education Materials:
- 200 books
- 35 workbooks, etc.

Study Tools:
- 100 pencils
- 50 tablets
- 35 pens, etc.

Furniture:
- 45 desks (students')
- 1 desk (teacher's)
- 47 chairs
- 3 shelves, etc.

Decorations:
- 3 framed pictures
- 1 potted plant, etc.

Sample classification system #2:
Cleaned every night:
- empty 1 wastebasket
- sweep floor
- wash 3 blackboards

Cleaned every week:
- wash tops of 35 desks
- wash floor
- dust the 3 shelves

Cleaned every month:
- wash the 5 windows

Cleaned and repaired every year:
- paint 4 walls
- repair desks
- clean and repair heating unit

ACTIVITY E:

Discuss what other types of inventories you might make in the classroom.

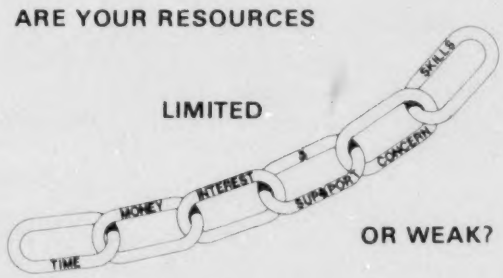
What about an inventory of the people? or people's attitudes: See Appendix B for a sample people inventory but have your students develop their own.

EXPERIENCE #3:
THE RESEARCH PROCESS

OBJECTIVES:

1. To develop a list of available resources.
2. To make students aware of methods of research.
3. To help prepare students for data collection.
4. To help prepare students to analyze and evaluate data.
5. To facilitate the organization of students into committees of research.

Teacher's Note:
The following experience breaks down the research process into suggested activities. The most important outcome of these activities is the involvement of the student at all stages of the research. The titles of the following activities outline the steps that can be followed in conducting a research study. Let the students initiate all the steps. Do not be afraid to let them make mistakes or even fail.



ACTIVITY A:
PLANNING THE STUDY:
RESOURCES AVAILABLE

Before the study can be actually planned, a look at the resources available to conduct the research must be made. While the whole class must be aware of their resources, this can be done in small groups. List the resource materials, time, money, and skill resources the class has at its command. This list may be approached in many different ways. Students may submit statements about their skills and interests, or the class as a whole may draw up a list.

Sample list of available resources:

Manpower — How many students can help in research? Teachers? Others?

Time — How much actual time can be devoted to the study? By man-hours? Class time? Additional time?

Skills — What skills do the researchers have that will be helpful in the research process? (Example: how many can type, run office machines, draw, use a calculator?)

Support — Does your administration support your study? Will they supply any materials or monies?

Money — What financial resources do you have? (Example: will you be able to send your questionnaires by mail?)

Resource Material — Bibliography, a list of resource people, films, and filmstrips.

ACTIVITY B:
WHERE DOES THE INTEREST LIE?
WHAT DO YOU WANT TO STUDY?

What is the class interested in studying? Is the study to be done by the class as a whole or are the components to be studied by groups or individuals? Perhaps the class isn't even aware what areas can be studied. They may want to appoint a committee to

investigate what they can study in their school or community. Suggested starting lists can be found in the teacher's note before Experiences 6 and 7. After the possible topics for research have been compiled, a decision about the study area must be made. Let the class decide how they want to accomplish this choice.

ACTIVITY C:
DEFINING THE PURPOSE OF THE STUDY

Discuss the importance of having a research design and purpose. Why is it valuable to formulate a hypothesis? Have the researchers define the purpose of their study.

ACTIVITY D:
DEVELOPING A RESEARCH PLAN

Work out a tentative research plan. Discuss how and why certain steps were taken and when. Investigate how the work load is to be distributed in the class and form your research committees.

ACTIVITY E:
DEVELOPING THE RESEARCH TOOLS

Have the students discover what information they want to collect.

1. What type of information do we want? Facts? Opinions? Reactions?
2. Who will be asked to answer questions?
3. How will the information be gathered? by questionnaire? interview? other?
4. How will these forms be evaluated?

ACTIVITY F:
DISCUSSION OF METHODS OF COLLECTING DATA

Anyone can ask questions or make up a questionnaire. The important outcome of this activity is to have the students experience the process. There are many different ways of collecting data, and a discussion of these ways and perhaps sample experiments of the methods would help the students decide which methods would be most valuable in their research. The three outstanding methods are interviewing, questionnaires, and observation. Each of these methods entails planning, training, pre-testing, and evaluation. For discussions of the steps in developing any of these tools, if possible refer to *Studying Your Community*, by Roland L. Warren. Another valuable source of data is the results of other people's research, such as U.S. Census results. These can be obtained from the U.S. Census Bureau. Depending on the interest of your students, discuss the meaning of random sample and how one is conducted. Also discuss the use of a weighted sample and its validity. Refer to Gallup and other researchers. Conduct some simple probability experiments and discover how these relate to your research design.

ACTIVITY G:
DEVELOPMENT OF RESEARCH INSTRUMENTS: PLANNING

Have the students develop a sample questionnaire or interview schedule and administer it to the members of the class. Discuss the manner in which an interview should be conducted and the validity of the results.

Examine some of the easier methods of interpreting the data you will collect. Have some of your students try using some of the simpler "statistical" methods. See Appendix D for "statistical" methods. Discuss what you are going to do with your data once you have collected it. How will questionnaires need to be designed to facilitate easy and speedy analysis? Compare the effort and difficulty of grading an essay with those of a multiple choice test.

ACTIVITY H:
DEVELOPMENT OF RESEARCH INSTRUMENTS: TESTING

Develop the actual instruments to be used in the study. Pre-test the instruments and correct ambiguous questions if desired.

ACTIVITY I: COLLECTION OF DATA

ACTIVITY J:
COMPILATION AND INTERPRETATION

Using previously planned techniques, compile and interpret findings.

ACTIVITY K:
PRINTING AND DISTRIBUTION OF FINDINGS OF THE STUDY (if desired)

Teacher's Note: The Study

The following two experiences offer some suggested ways in which you can approach a research study. The two areas chosen for study are the school and the community. The preceding experiences were designed to prepare the student for participation in an actual study. The area the class chooses to study, the school or the community, will depend on the time, interest and resources available. Either Experience #4 or #5 can be studied in some depth, or a few components in each may be studied.

EXPERIENCE #4:
THE SCHOOL: A STUDY

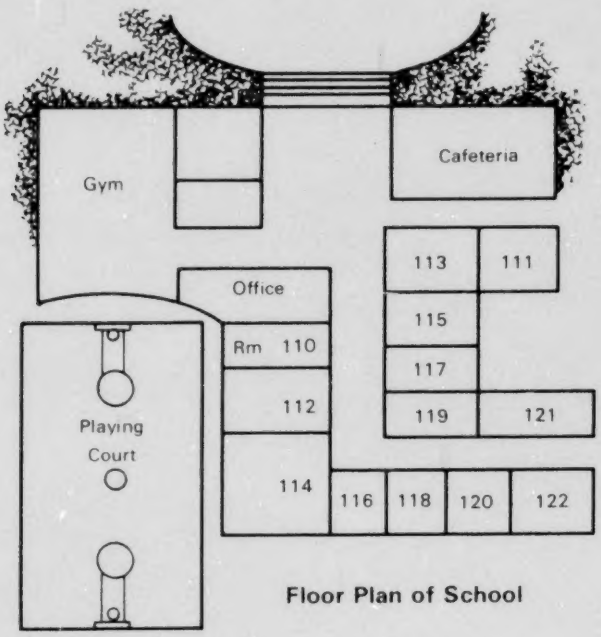
OBJECTIVES:

1. To develop in the student a greater awareness of the many factors which make up a school and its operations.
2. To involve the student in a process of collection, interpretation, and evaluation of data about his school.
3. To expose the student to a number of resources and data collection techniques.

Teacher's Note:
Below are suggested only a few of the many ways your students can approach the study of the school and its operations. These may be carried out as individual assignments, contract fulfillments, or as group or class activities.

The School: Components that Can Be Researched

1. *Physical plant*
2. *Atmosphere: living/working space*
3. *Personnel*
4. *Attitudes of students, personnel, parents*
5. *Food and health*
6. *Student body*
7. *School board and administration*
8. *History*
9. *Curriculum*



Floor Plan of School

ACTIVITY A:

Opinion Poll: Teacher may devise a survey form designed to trigger students' response to school and thus get them thinking about the school. Questions should cover as many areas as possible (physical plant appearance of building, convenience, school staff, other students).

Sample Questions

1. What do you think of the school building's appearance? a) very pleasant b) pleasant c) depressing d) ugly e) no opinion
2. Do you find your teachers to be very interested in helping you? a) all are b) some are c) non are d) no opinion
3. Would you rather be in another school? a) yes b) no c) no opinion
4. How do you feel about the other students in the school? a) very positive b) most are OK c) some are OK d) don't like any e) no opinion

Materials:
Ditto master, ditto paper

ACTIVITY B:

School Tour: Tour of building and campus. Students will then be asked what they liked on their tour. Was there anything they would like to know more about?

Teacher may use this as a guide in helping students choose subject for inventory.

ACTIVITY C:

Question Box (Suggestion Box): Students should feel free to ask any questions they have about the school (or make suggestions). These may be left unsigned.

It is not the teacher's role to answer the questions but rather to discuss methods of finding the answers.

Materials:
Box (shoebox), paper

ACTIVITY D:

School Quiz: Teacher-initiated questions about the school. This exercise should be designed to give the student the opportunity to *think* about his school.

Sample Questions:

1. How old is this school or when was this building built?
2. How did the school get its name?
3. Who is the principle?
4. What is the enrollment of the school?
5. How does the school rank with others in the area (or state) academically?
6. Does this school participate in sports events with other schools? What?
7. What services does the school offer the student? Community?

Materials:
Ditto master, ditto paper

EXPERIENCE #5:
THE COMMUNITY: A STUDY

OBJECTIVES:

1. To develop in the student a greater awareness of the many social cultural, economic, and political factors which make up the community.
2. To involve the student in a process of collection, interpretation, and evaluation of data about his community.
3. To expose the student to a number of resources and data-collecting techniques.
4. To provide the opportunity for the student to take responsibility (make a committment) and evaluate this achievement.

THE COMMUNITY: COMPONENTS THAT CAN BE RESEARCHED

A. The Community
   1. Location, size and shape
   2. Population
      a. Age distribution
      b. Racial/cultural backgrounds
      c. Religious make-up
      d. Political make-up
   3. Economic Base
      a. Types of businesses, size of work force
      b. Types of industries, size of work force
   4. Standards of Living
      a. Food costs
      b. Housing costs
      c. Transportation costs
      d. Professional and educational costs
      e. Taxes and fees
   5. Government, Politics, and Law Enforcement
      a. Type and structure of local government
      b. Size and location of safety forces
      c. Crime rate
      d. Court system and location
   6. Housing
      a. How many dwelling units and types are there?
      b. Owned vs. rented
      c. Rent scale? Purchase scale?
      d. What are the community's zoning and building codes?
      e. Condition of existing structures
      f. Average population per dwelling?
   7. Education
      a. Who belongs to school board?
      b. How are board members chosen?
      c. Educational facilities
         1. Number, size and location of school buildings
         2. Location of administrative buildings
         3. Location of nearest colleges/universities
         4. Location of library or libraries
         5. Name and location of museums (if any)
   8. Recreation, Parks, and Open Spaces
      a. Location and number and type
      b. Organized recreation available
      c. Unorganized recreation
      d. Commercial recreation facilities; how many, cost, types
   9. Transportation
      a. What types of transportation; public/private
      b. Relative use
      c. Rider cost and schedules
      d. Efficiency
   10. Services: Federal, State, County, Local
      a. Types and location: Social security, food and drug credit unions, old age, vocational, public safety, child welfare, educational, etc.
      b. Public assistance, numbers
      c. Medical services; number of doctors, specialists, clinics, hospitals
   11. Environmental Problems
      a. Types: noise, air, water, land, pollution
      b. Causes/sources
      c. Governmental agencies - local, state, etc.

ACTIVITY A:
COMMUNITY NOTEBOOK

Students collect, interpret and organize community data into notebook form.

Supportive Activities:

1. Field trip(s) — tour(s) of community during which students will keep written journal or photographic record of trip.
2. Visit public library for collection of data.
3. Guest speakers — community leaders become involved in interaction with students.
4. "Operation Phonebook" — students use telephone directory and yellow pages as resource for collection of community data. Also see bibliography number 8.
5. Community map — map study exercise of community.

Materials

Cameras (two inexpensive box cameras) 4-6 rolls of film, notebooks, phonebooks, bus.

ACTIVITY B:
COMMUNITY RESOURCE CENTER

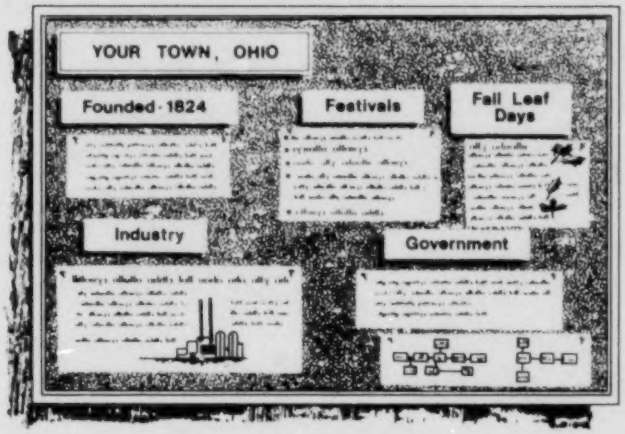
Students collect, interpret and organize data about community and establish a "resource center" which may be set up in the classroom or school library.

Supportive Activities:

Same as for Activity A

Materials

Same as for A; also file filders, file cabinet, shelving.



ACTIVITY C:
COMMUNITY BULLETIN BOARDS AND/OR POSTERS

Students would construct informative bulletin boards/posters showing social, political, economic, and cultural structure of their community.

Supportive Activities:
Construction of bulletin boards/posters; otherwise same as for A.

Materials:
Posterboard, lettering, construction paper, poster paint, magic markers. See also materials for A.

ACTIVITY D:
COMMUNITY RADIO SHOWS

Students make audio taped programs about the community. These programs might be featured during morning P.A. announcements.

Supportive Activities:
1. All activities used in Activity A.
2. Organization and taping of programs.

Materials:
Same as A; plus blank tapes or cassettes, tape recorder.

ACTIVITY E:
MULTI-MEDIA PRODUCTION

Students produce a multi-media program or series of lessons about their community. This would involve the making of slides, their organization into a meaningful series, and the coordination of visual and audio information.

Supportive Activities:
Same as A with the addition of:
a. Production and arrangement of slides
b. Sound-track taping
c. Presentation of "show" or "lesson."

Materials:
Same as A, plus camera, slide film, slide projector, blank tapes, tape recorder, screen.

ACTIVITY F:
VIDEO-TAPE PROGRAMS

Collection and organization of data into television special about the community

Supportive Activities:
Same as A, plus taping session.

Materials:
Same as A plus video tape machine and tapes.

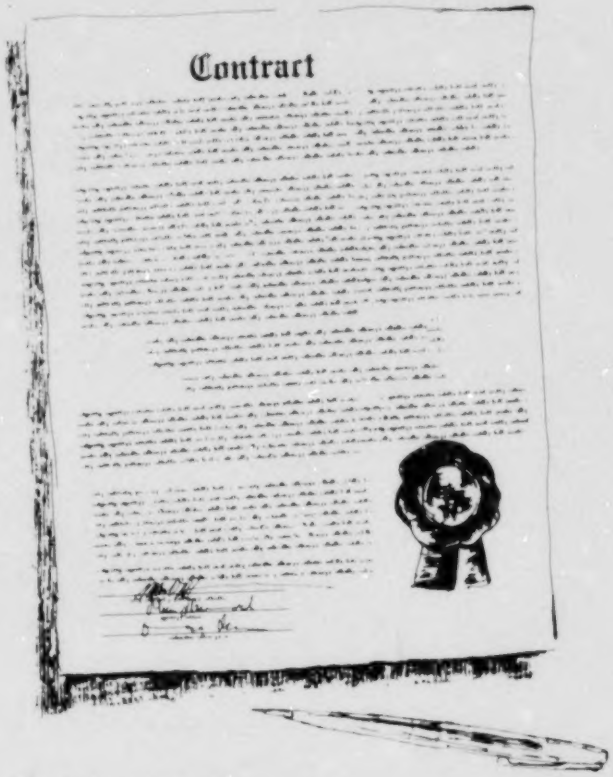
ACTIVITY G: TERM PAPER

Students collect, interpret, and organize data about their community. This may be done individually or in groups. Minimum length 3 pages.

ACTIVITY H: STUDENT EVALUATION(s) (Optional if contracts are used)

Students make two evaluations of their performance. The first evaluation may be made after the data collection phase of the activity, while the final evaluation is made at the completion of the project.

Emphasis should be placed on the question: Did I accomplish my own objectives?



EXPERIENCE #6:
A CONTRACT IS A COMMITMENT (Optional)

OBJECTIVES:
1. The students will gain an understanding of the meaning of the term "contract."
2. The students will become aware of the responsibilities involved in the making of a contract.

Teacher's Note:
Experiences #4 and #5 contain many activities that can be done with the whole class, in small groups, or on an individual basis. An interesting and rewarding experience for both the student and the teacher is the contract method. The student will be able to select not only what areas he wishes to study but also into how much depth he hopes to go. It is even more valuable when the student contracts for a particular grade. The student may become aware of what he values as quality work and just what work load he is capable of completing for the first time. The burden of the grading decision is removed from the teacher and placed on the student. If you decide to use this method, the next two activities would be valuable.

ACTIVITY A:
INTRODUCING THE CONCEPT OF A CONTRACT (Class Discussion)

What is a contract? When is a contract binding? Who is responsible for meeting the terms of a contract? What must be present for a contract to be successful? (trust, a belief that both parties will meet the terms)

Materials:
The use of an overhead projector and blank transparencies may be valuable.

ACTIVITY B:

Following the discussion, have the class try developing a sample contract. See Appendix for a sample contract.

ACTIVITY C:

As the unit progresses, have the students develop their own contract.

REFERENCES

BOOKS

Atchley, Mell H. *Community Study Guide.* Gainesville: Department of Sociology, University of Florida, 1951.

Gibson, Heary. *Improve Your Environment, Fight Pollution with Pictures.* Rochester: Eastman Kodak Company, 1970.

Meshenbera, Michael J. *Environmental Planning: A Selected Annotated Bibliography.* Chicago: American Society of Planning Officials, 1970.

Robinson, Arthur H. *Elements of Cartography.* New York: John Wiley and Sons, Inc., 1967.

United States Geological Survey
Aerial Photographic Reproductions (10 pages)
Geologic Maps: Portraits of the Earth (20 pages, 30 cents)
Selected Bibliography on Maps and Mapping (8 pages)
Topographic Maps (24 pages)
Types of Maps Published by Government Agencies (10 pages)

Single copies and multiple copies can be obtained from a distribution branch:
Local distribution Branch
U.S. Geological Survey
1200 South Eads Street
Arlingon, Virginia

Warren, Roland L. *Studying Your Community.* New York: The Free Press, 1965.

Wentworth, Daniel F. and others. *Mapping Small Places.* Minneapolis: Winston Press, 1972.

Wurman, Richard S. (Editor). *Yellow Pages of Learning Resources.* Aspen: The Invisible City in Aspen, International Design Conference, 1972.

Your own community's telephone book.

APPENDIX A: MAPPING

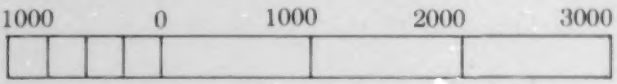
1. *The Base Map*
   Before you can map any geographic feature or political or population distribution, you need an idea of the area being considered. To get an overall picture of your town or area, you need to develop a base or outline map. Base maps can be compiled and drawn but often take more time than the actual study. An easier way to obtain a base map is to use any map of the area and to trace the outline features and change the scale to meet your purposes. Many communities print street maps, which can usually be obtained from the Chamber of Commerce. Industrial maps or school district maps can also be used. For an overall picture of your area, use a topographic map for a base map.

2. *Map Scale*
   The scale of a map tells the relation of the distance between any point on the map to the distance between the same points on the ground. Map scale can be shown in many ways:
   a. verbal scale — shown through a simple statement: one inch equals one mile.
   b. fraction scale — where the numerator in any unit (such as inches) on the map is equal to the denominator in the same unit on the ground.
   example:

$$\frac{1}{24{,}000} \quad \text{or 1:24,000}$$

   c. graphic scale — a line drawn on the map divided into parts and in proportion with the verbal scale.
   example:

SCALE OF FEET



3. *Changing Map Scale*
   Often the base map available to you is not the size you need. The scale of the map can be changed by any of the following methods: projection, photography, pantography, and similar squares.

   a. *Projection*
   A variety of commercial devices have been developed for this purpose, and, if your school owns one, by all means use it. They usually consist of an overhead, opaque projector with an adjustable downward focus to a drawing surface. The map is projected onto a drawing paper and then copied. You can do the same thing using a regular classroom overhead projector and focusing onto a drawing paper on the wall. Since projection of any object tends to somewhat distort an image, your map will not be in exact scale, especially around the outer edges.

   b. *Photography*
   Using photography is perhaps the easiest method for the professional but the most expensive for the classroom.

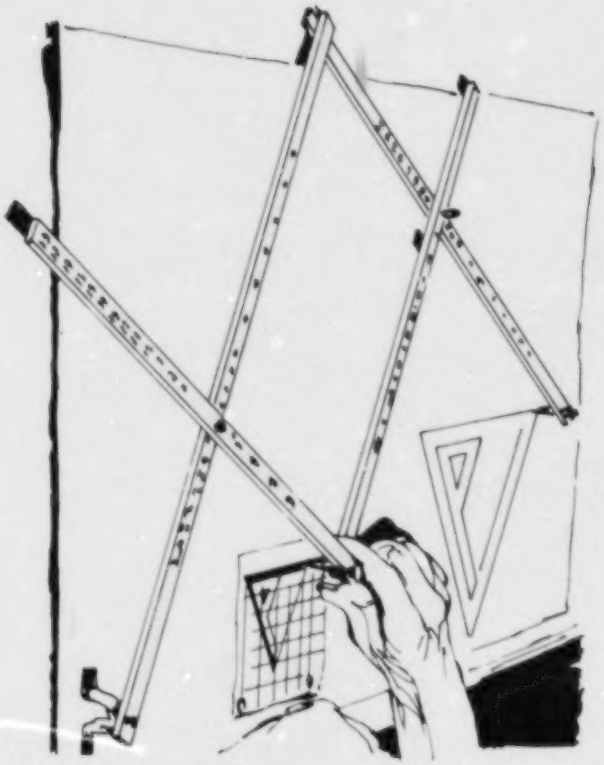
Use the following chart with topographic maps.

NATIONAL TOPOGRAPHIC MAPS

Series	Scale	1 inch represents	Standard quadrangle size (latitude-longitude)	Quadrangle area (square miles)	Paper size E-W width N-S length (inches)
7½-minute	1:24,000	2,000 feet	7½ × 7½ min.	49 to 70	[1] 22 × 27
Puerto Rico 7½-minute	1:20,000	about 1,667 feet	7½ × 7½ min.	71	29½ × 32½
15-minute	1:62,500	nearly 1 mile	15 × 15 min.	197 to 282	[1] 17 × 21
Alaska 1:63,360	1:63,360	1 mile	15 × 20 to 36 min.	207 to 281	[2] 18 × 21
U.S. 1:250,000	1:250,000	nearly 4 miles	[3] 1° × 2°	4,580 to 8,669	[4] 34 × 22
U.S. 1:1,000,000	1:1,000,000	nearly 16 miles	[3] 4° × 6°	73,734 to 102,759	27 × 27

[1] South of latitude 31° 7½-minute sheets are 23 × 27 inches; 15-minute sheets are 18 × 21 inches.
[2] South of latitude 62° sheets are 17 × 21 inches.
[3] Maps of Alaska and Hawaii vary from these standards.
[4] North of latitude 42° sheets are 29 × 22 inches. Alaska sheets are 30 × 23 inches.

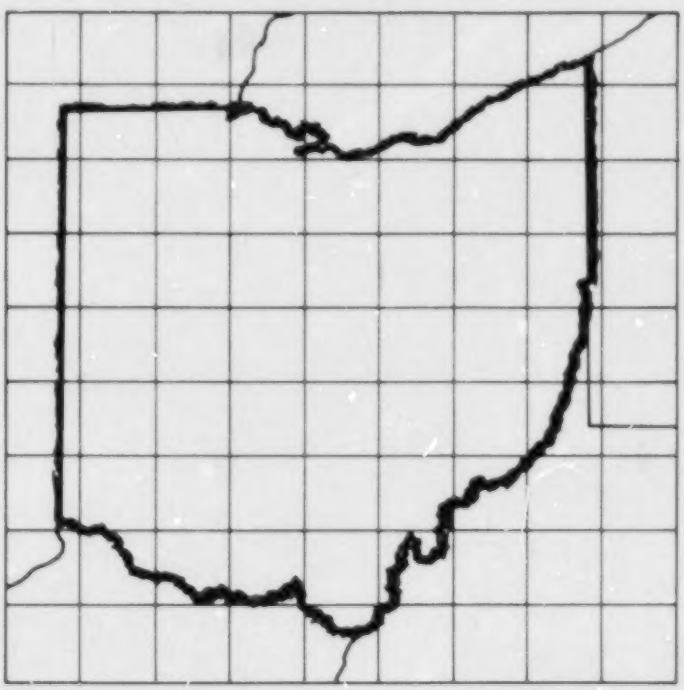
*Taken from *Topographic Maps*, a pamphlet by the Geological Survey, U.S. Department of the Interior, 1972.

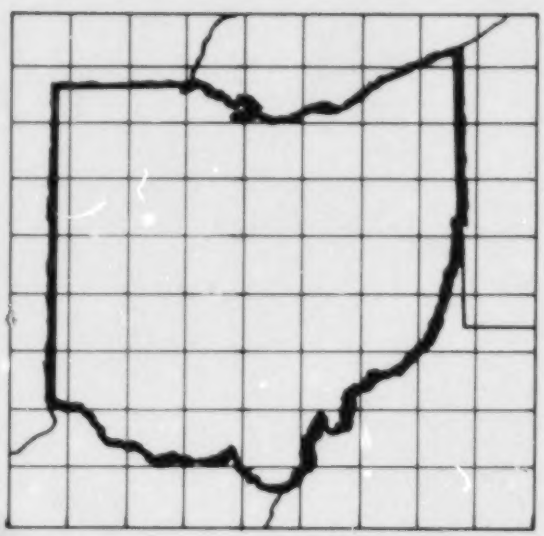


c. *Pantograph*
A pantograph is a very old instrument, but it is still very valuable today. Small wooden models can usually be obtained for only a few dollars and would be a valuable addition to your classroom. They consist of several rods, a pivot point, and a drawing lead. While you trace the base map with the pivot point, the lead is drawing the map on a different scale.

d. *Similar Squares*
This is perhaps the least expensive method and most students will be able to do this. This involves drawing a grid of squares on your original base map and, then, on a clean sheet, drawing the corresponding number of squares in the new scale. Done with care, it can be very accurate.

4. *Map Symbols*
Map symbols can either be quantitative or qualitative, depending on whether they represent kinds of phenomena or amounts. Symbols can be a point, a line or an area.





APPENDIX B:
SAMPLE CLASSROOM POPULATION INVENTORY

	MALE	FEMALE	TOTAL
AGE			
Over 15 years			
Over 14 years			
Over 13 years			
Over 12 years			
Over 11 years			
*Average Age			
HEIGHT			
Over 6 ft.			
5½ - 6 ft.			
4½ - 5 ft.			
Under 4 ft.			
*Average Height			
HAIR COLOR			
Blond			
Brown			
Dark brown			
Black			
Red			
Grey			
MODE OF TRANSPORTATION TO AND FROM SCHOOL			
Public (Other than board owned bus)			
Board-owned Bus			
Private auto			
Bicycle			
Walk			
*Average			
LUNCH			
Brings from home			
Buys: At School			
Other			
*Average			

APPENDIX C: SAMPLE STUDENT CONTRACT

Name: _____

Date: _____ to _____ Class: _____

Grade Contracting For: _____

Area of Research to be undertaken: _____

Explanation of procedures and
evaluation of results: _____

_____

_____

_____

_____

_____

_____

_____

_____

How Evaluated:

Participation in discussion _____
Reports_____ How many? _____ When?_____
Journal_____
Tests _____
Other _____

_____

I, _____, agree to fulfill all preceeding requirements as designated for the grade of _____. I realize that failure to meet the above requirements can result in an adjusted grade.

name of student

_____

signature of student

I, _____, agree to evaluate the above student's work in accordance with the agreed upon requirements for the grade of _____. Failure to meet the above requirements can result in an adjusted grade.

name of teacher

_____

signature of teacher

APPENDIX D:
"STATISTICAL" METHODS

The following methods can be used in the compilation of data gathered in an inventory. More complicated "statistical" methods can be found in any elementary statistics text.

1. Arithmetic Mean (average)

$$\overline{X} = \frac{\Sigma X}{N} \qquad N = \text{Sample Size}$$

Example: Add: 22, 7, 9, 54 → 92

Then divide by sample number or 4 $\quad 4\overline{)92}$ → 23

$$\overline{X} = \frac{\Sigma X}{N}$$

$$\overline{X} = \frac{92}{4}$$

$$\overline{X} = 23$$

2. Median — that value of X such that there are as many x's less than it as more than it.

$$\text{Median position} = \frac{N + 1}{2} \qquad N = \text{number of x's}$$

Example: X's

11, 9, 8, 7, 7, 6, 5, 5, 5, 4, 4, 4, 4, 3, 3, 3, 3, 2, 2, 1, 0, 0

$$\text{Med. Pos.} = \frac{N + 1}{2}$$

$$= \frac{22 + 1}{2}$$

$$= \frac{23}{2}$$

= 11.5: count in 11.5 spaces either way

Median = 4

3. Mode — most usual or typical value.

Example: X's

11	5	3	1
9	5	3	1
8	4	3	0
7	4	3	
7	4	2	
6	4	2	

Mode Either 3 or 4

4. Ratio

What is the ratio of males to females in the class?

Example 1:

Number of males	25
Number of females	25
Total in class	50

25:25 or 1:1

Example 2

Number of males	30
Number of females	10
Total in class	40

30:10 or 30/10 = 3/1 = 3:1

5. Percentage

What percent of the class passed the last test?

N = 36 (total number in class)
24 passed, 12 failed
X = Number of students that passed test

$$\% = \frac{X}{N}$$

$$\% = \frac{24}{36} = \frac{2}{3}$$

% = 66% of the class passed the last test.

ENVIRONMENTAL MANAGEMENT

The purpose of this unit is to provide an opportunity for junior high school students to become knowledgeable about the ways in which their own community attempts to identify and deal with concerns related to environmental management. It concentrates on the historical growth and development of the community, land-use, and zoning regulations; and water, sewage, and solid waste management. These topics are not meant to be inclusive but merely illustrative of some of the many areas of management concern within local communities.

Substantial pre-planning on the part of the teacher is required in order for this unit to be successfully completed. Among considerations required are these:

1. Because this unit must by its nature be tailored to the local community, it will be necessary for the teacher to become familiar with those local situations and problems which are appropriate for study. This may provide a serious challenge, particularly to the teacher who is new to the community itself. An additional difficulty may be encountered in small communities where the quantity of information available is not so great. Most of the management considerations suggested in this unit are normally identified with urban areas; however, they also exist, but are not so readily identified in smaller communities. Another problem which has surfaced in rural areas is in locating public officials who are willing to discuss such concerns with junior-high age youngsters.
2. Persons and/or agencies to be contacted should be identified by the teacher well in advance; in many cases, they should be alerted so that they will have time to prepare for student contacts, questions, and requests for information.
3. The teacher must be aware of sensitive issues and persons within the community, and take under thoughtful consideration how best to approach them.
4. Parents should be alerted in advance about what types of activities (interviewing, etc.) their children will be doing and the reasons for doing them.
5. Because this unit calls for student contacts in the community, school administration must also be alerted in advance about the nature of and reasons for these contacts.
6. Because reference materials for most of the needed information in this unit are specific to the given community, such materials must be located locally. It is unlikely that the school library will have them, at least initially; discussion with local school and public libraries may assist in the location of such information as required.

INSTRUCTIONAL OBJECTIVES:

At the conclusion of the unit, the student will:

1. understand and analyze the factors which influenced the growth of his community from its founding to the present.
2. analyze and evaluate his own community's plans to manage and regulate the orderly growth of the community.
3. understand the concept of zoning and evaluate the impact of zoning regulations in his own community.
4. recognize the need and necessity for sound water management for the health, safety, and survival of the community.
5. understand the role of the community in the management of sewage treatment and disposal.
6. become aware of the increasing amounts of solid waste being generated, attendant disposal problems, and alternative possibilities for coping with them.

CONTRIBUTORS TO THE DEVELOPMENT OF THIS UNIT

Author/Editor ..... Laurence E. Pennell
Revisor ..... John F. Disinger

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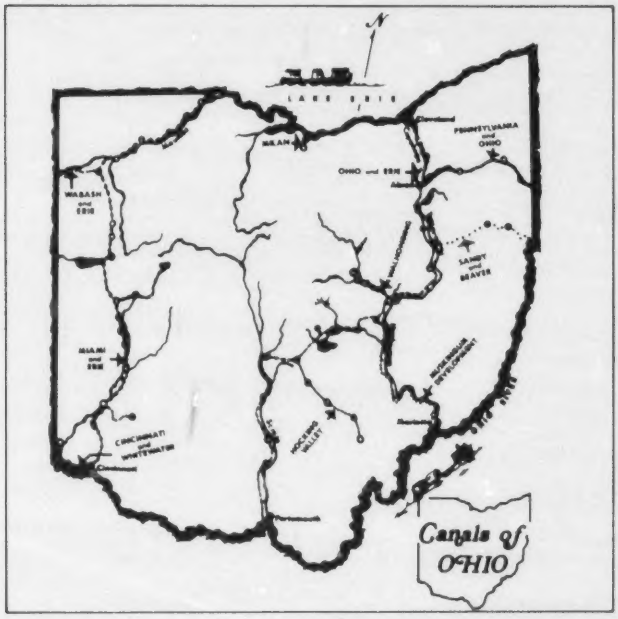
EXPERIENCE #1:
COMMUNITY GROWTH AND DEVELOPMENT

OBJECTIVE:

The student will understand and analyze the factors which influenced the growth of his community from its founding to the present.

Teacher's Note:
The purpose of this section is to enable the understanding of the growth and development of the community from an historical perspective. Extensive use of community resources is suggested. Much of the desired information can be obtained through local libraries, historical societies, and the Chamber of Commerce. Additional information can be obtained in the 1970 census reports, in the Statistical Abstract, and from various local government agencies.



ACTIVITY A:
WHY IS THIS COMMUNITY HERE?

Have the students examine the factors which led the founders of your community to pick the site of the community. Questions that can be raised to direct student research efforts:

Where was the original site of the settlement located?

Why did they choose this particular site?

What were the advantages and disadvantages of this site?

What were the natural features of the area that promoted or constituted a barrier to site selection?

What were the major transportation routes in the area and how did they influence site selection?

What functions did the early settlement perform (farming, defense, exploitation of natural resources, manufacturing, trade and commerce)?

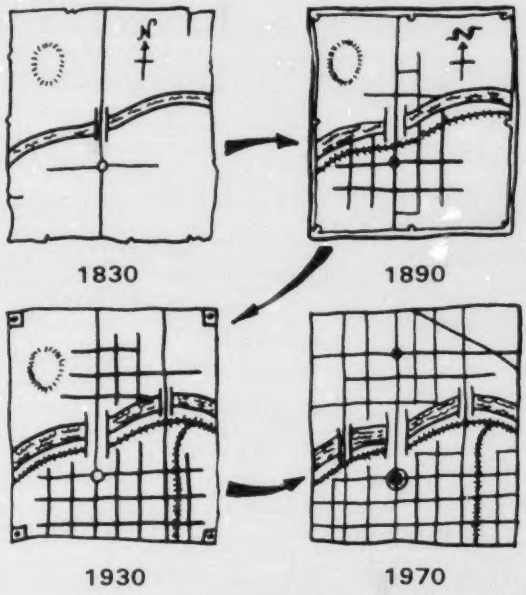
What factors aided the early growth of the settlement?

What were the early commercial and industrial concerns?

How was the early community governed?

ACTIVITY B: COMMUNITY GROWTH

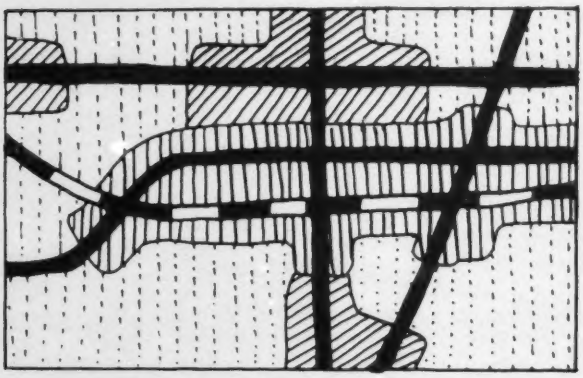
Teacher's Note:
Done in detail, this activity presents the danger of being overly time-consuming, to the point where it could be treated as a separate unit in itself. The teacher must make a judgment, based on the local situation and on the values which he sees in the unit, about how far to carry it. One recommendation is to sub-divide the activity into a series of small-group activities.



Have the students trace the growth or lack of growth of the community since its founding. It may be appropriate to select certain years (1790, 1830, 1910, 1950) and have students investigate the stage of growth at each period. Students should be encouraged to identify the major changes and factors which affected the growth of the community. Some of the following factors may be identified:

1. discovery of new resources (minerals, oil, salt, stone, etc.)
2. development of new types of transportation and new routes (roads, canals, steamships, railroads, airplanes, etc.)
3. development of new industries
4. commercial expansion
5. natural disasters
6. war
7. development of new technology
8. expanding job opportunities

Students should also be encouraged to develop a series of maps and graphs showing the growth of the community at the various stages. Population growth, agricultural vs. non-agricultural jobs, ethnic and minority groups, transporation routes, population density, and community land use are just a few examples of types of data that can be researched.



ACTIVITY C: LAND USE PATTERNS

Have the students prepare a large map showing present land use patterns in the community. A completed map should contain the following:

- Major physical features
- Limits of urban settlement
- Residential areas
- Commercial areas
- Light and heavy industry areas
- Public land use areas (schools, municipal facilities, parks, etc)
- Major transportation routes and facilities

Supplemental maps or overlays may also be produced by the students, showing population density; ethnic and minority groups; high, average, and low income distribution; housing conditions; decaying commercial and residential areas, etc.

EXPERIENCE #2: COMMUNITY LAND USE MANAGEMENT AND ZONING

OBJECTIVES:

The student will investigate and learn about his own community's plans to manage and regulate the orderly growth of the community.

Understand the concept of zoning and analyze the impact of zoning regulations in his own community.

Teacher's Note:

The purpose of this section is to utilize local resources with regard to land use, both present and future. Most cities have city master plans and numerous community surveys completed by outside consultants that project future growth and suggest setting aside certain areas for specific land uses. Many of these master plans have been adopted into law. Master plans try to anticipate growth (and its concomitant demands) and provide for orderly development. Most major aspects within a community are considered. Even in rural areas, village, township, and county regulations exist which in effect control future growth.

Often students fail to see the positive effects of zoning and its impact on the orderly growth of a community. While zoning laws do place restrictions on the use of private property, they also function to protect the rights of adjacent property owners. Zoning regulations are common in every community in Ohio. Even the smallest political subdivisions have regulations affecting landfills, open dumps, trailer parks, etc. In rural areas, zoning may be a more subtle political issue than in cities. Enforcement is often lax, in response to local pressures.

ACTIVITY A: COMMUNITY PLANNING

Have students contact local government officials or the local planning agency and acquire a copy of the community's master plan and any accompanying maps as well as zoning regulations and maps. Have the students analyze and interpret the report, regulations, and maps. The teacher can lead the exercise by asking the following questions:

1. What areas of the community are destined for a different land use in the future?
2. What will happen to people and structures in existing areas that will experience land use changes?
3. Where will new expressways, bypasses, bridges, and other new roads be constructed?
4. Toward what areas is the growth of the community headed?
5. Have areas been designated for the following?
   a. New schools
   b. Libraries and other cultural sites
   c. Parks, open spaces, and recreation areas
   d. Industrial development sites
   e. Commercial shopping centers

f. Low-income housing areas
g. Police, fire, and other municipal service areas
h. Mass transit facilities

6. What are the projected population statistics for the future? On what are they based?
7. What are the estimated costs for expanding existing facilities and developing new facilities? Who will pay for these improvements? How much of the funds will come from the local, state, and federal levels?

ACTIVITY B: ZONING

After a preliminary introduction to the topic of zoning, have the students investigate the zoning regulations and determine the names and definitions of the various zoning categories, such as commercial, heavy industry, light industry, single family, and multi-family designations. Have the students locate on a zoning map their homes and school. Pick an appropriate area near the school and conduct a visual survey of the area. Students should be alerted to note any land use which does not conform to the zoning regulations affecting the area. If non-conforming uses are noted, the following questions could be introduced.

1. Was the property being used in the same manner before the passage of the current zoning regulations and therefore exempt?
2. Was the use of the property a result of spot zoning or had a variance been granted?

Caution should be taken not to be overly technical with respect to zoning (it is all too easy to bog down here), but to keep considerations on an elementary level, particularly with respect to the interests and abilities of the group.

ACTIVITY C: COMMUNITY SURVEY

Have the students design and conduct a community survey to find out what factors people consider important before moving to a new city or neighborhood. A simple survey form could be used that merely asks residents to list the ten most important reasons for moving to their present neighborhood. The results could then be tabulated and conclusions drawn. A similar survey could also determine what factors are most undesirable about the neighborhood environment and need to be changed.

ACTIVITY D: COMMUNITY MODELS

Students can design and create models of new communities that incorporate the environmental and quality of life factors valued by our society. Students should be encouraged to seek information and read articles about new planned communities such as Reston, Virginia, and Columbia, Maryland.

ACTIVITY E: ZONING IMPACTS

Identify one or more areas within the community whose growth and development suffered from the lack of effective zoning regulations. Have the students discuss and determine the undesirable aspects of the development of these areas. What zoning regulations would have been necessary to prevent the present conditions? What can be done to correct the situation at the present time? What better types of land use could the area be utilized for? Are private groups or governmental agencies concerned about these areas? What proposals have been made to improve the situation? How could these areas be improved by private developments, the Public Housing Authority, urban renewal projects, beautification projects, public condemnation, and conversion of the area into parks, open spaces, recreation areas, etc.?

ACTIVITY F: LAND USE CONFLICTS

Have the students read and research local newspapers for conflicts within the community over proposed land use and zoning regulations. Students can prepare position papers for the major groups involved in the conflict. Representatives of these various groups could be contacted to provide additional information. The contacts could be made by letter, questionnaire, personal interview, or a direct invitation to speak to the entire class.

One of the most interesting student resources on this general topic is a pamphlet entitled "Municipal Politics." It is a unit book designed for students in grades 7-12 and is available through American Education Publications of Columbus, Ohio. It is highly recommended.

ACTIVITY G: ZONING IN ACTION

Zoning regulations and their application and interpretation are common topics at city council meetings. County commissioners and village trustees also deal with these areas. A field trip to a meeting where zoning matters are on the agenda would be worthwhile. Local zoning boards and zoning boards of appeal should not be overlooked. The teacher should make prior arrangements with the appropriate governmental group and hopefully allow the students to hear presentations and question the major participants either before or after the formal meeting. Students should be encouraged to summarize the issues, the points of view, and the procedures they observed.

Teacher's Note for Experiences 4 and 5:
Individual teachers may wish to pursue these experiences in any of several ways, depending on local concerns, student interest, and levels of cooperation available.
Possible options for the teacher include these:

1. *Experiences 4 and 5 may be combined and treated as single experiences.*
2. *Only one or two of the experiences may be selected for completion.*
3. *The social studies teacher(s) may cooperate with the science teacher(s), so that both the biophysical and socio-cultural areas of these interdisciplinary management concerns may be treated through one comprehensive study for each or any of the experiences, as they most appropriately should be.*
4. *One or more of the optional field trips is highly recommended. If arrangements for trips cannot be made, an alternative activity is to invite a local resource person - normally not a technical person, but a governmental official to discuss with the class environmental management aspects of one or more of these concerns.*

EXPERIENCE #3: WATER MANAGEMENT

OBJECTIVE

The student will understand the need and necessity for sound water management for the health, safety, and survival of the community.

Teacher's Note:
Water is such a common and inexpensive product that students often fail to realize its importance. Like many things in society, we often take it for granted until it no longer exists or creates a problem. Water quality has become a recent issue in Ohio as a result of a Federal Government report that cited many examples of communities whose drinking water failed to meet minimum health standards. A community in Michigan has been warned that its water is unsafe because minute fibers of asbestos contaminate it. Effective management of our water resources and water quality are focused upon in this section.

ACTIVITY A: COMMUNITY WATER SUPPLY

Have the students investigate the source of the community water supply. Introduce the students to the concept of a watershed. Does the community depend upon aboveground or underground sources for their water? Is the supply of water adequate? What provisions are made for storage of water during drier months? What is the quality of the water received by the community prior to treatment? What are the sources and types of pollutants and contaminants present in the water? Are there other communities and industries upstream which discharge into the water source, and are thus partly responsible for the water quality? Are the present storage and treatment facilities sufficient to meet current and future water needs of the community? Will the present source of the community's water supply be adequate to meet future water demands?

ACTIVITY B: ADEQUATE WATER SUPPLY

Have the students investigate the importance of having an adequate supply of quality water.

1. Have the students determine the impact of not having enough water on the present and future growth of the community. What would the economic impact be? Would industries who are high-volume water users have to cut back production, layoff workers, move to a community with an adequate water supply, restrict future expansion? Would water shortages and rationing slow down the development of new residential areas. Would shortages cause people to seek other communities in which to work and live?
2. Have the students investigate the potential health and safety hazards that might exist if the water quality standards of a community were below the allowed minimums.

ACTIVITY C: FAMILY WATER USAGE

Have students determine the water usage of their own families. Collect the data and analyze it. They must learn to read a water meter. Why are there differences in water consumption among students' families? Have the students list as many possible reasons as they can for high water consumption. Possible reasons for higher usage might include the presence of the following:

— larger family
— automatic washing machine
— garbage disposal
— more bathrooms
— showers instead of tubs
— automatic lawn sprinklers
— regular washing of family cars
— etc.

Have the students determine if any correlations exist between the factors listed and the differences in water consumption. To conclude the activity, have the students generate a list of ways a family can conserve water. Posters could be drawn and displayed in the school to promote more efficient utilization of our water resources.

ACTIVITY D: WATER TREATMENT PLANT FIELD TRIP (Optional)

Take a field trip to the local water treatment plant. Have the students find out who works there and what their duties are. Students should, as a result of the field trip, be able to list or draw a schematic of the various stages of treatment carried out at the plant. (This is particularly appropriate for highly-motivated students.) A related activity would be for the students to diagram the movement of water from

its source, through treatment, to the consumer. If local field trips are not possible, community resource people can be interviewed by the students or invited to speak to the class. At last resort, the teacher can present the basic information. (This activity will be most meaningful if taught in cooperation with science teachers.)

EXPERIENCE #4: SEWAGE MANAGEMENT

OBJECTIVE

The student will develop an understanding of the role of the community in the management of sewage treatment and disposal.

Teacher's Note:
Maintenance of good water quality in our nation's streams and lakes is focused upon in this experience. It is hoped that the teacher will relate this experience with Experience #3 concerning water management.

ACTIVITY A: SEWAGE AND SEWAGE TREATMENT

To introduce the students to the topic of waste water and sewage treatment, the teacher should either cover in class or assign as research some of the following questions:

1. What is the composition of sewage?
2. Is there a difference between sewage and waste water?
3. What is the difference between a sanitary sewer and a storm sewer?
4. What is the purpose of sewage treatment?
5. What are the purposes of primary, secondary, and tertiary treatment stages?
6. To what extent is sewage treated by your community's treatment plant?
7. Define sludge and describe how it is disposed of.

ACTIVITY B: SEWAGE TREATMENT PLANT FIELD TRIP (Optional)

Make arrangements for a field trip to your local sewage treatment plant. Alert the students to seek the following information:

1. Draw a flow chart showing the various stages of treatment.
2. Does the local plant have advanced or tertiary treatment?
3. What is the water quality of the plant's discharge?
4. What is the water quality of water receiving the discharge?
5. Does the plant's discharge improve or lower the quality of the receiving body of water?
6. What effect does your treatment plant's discharge have on communities down stream or those who draw their water supply from the body of water into which your discharge flows?
7. Does the discharge from your local plant meet existing standards? Will it meet future standards?
8. Are additional treatment stages needed?
9. What problems are created by not having separate sanitary and storm sewers?
10. Does the local treatment plant have adequate facilities to treat the current load?
11. Are there plans for future expansion? Capacity? Advanced treatment stages?
12. What are the penalties and consequences of not adequately treating sewage?

(This activity will be most meaningful if taught in cooperation with science teachers.)

EXPERIENCE #5: SOLID WASTE MANAGEMENT

OBJECTIVE:

To enable the student to become aware of the increasing amounts of solid waste being generated in this country and the attendant disposal problems.

ACTIVITY A: SOLID WASTE DISPOSAL

Have the students investigate the manner in which your community disposes of solid waste. These are some questions that can be raised:

1. What are the major components of solid waste?
2. How is it collected? By whom?
3. What facilities does your community have to dispose of solid waste?
   a. open dump
   b. sanitary landfill
   c. compacter
   d. shredder
   e. separator
   f. recycling facility
   g. incinerator

ACTIVITY B: WASTE DISPOSAL FIELD TRIP (Optional)

Arrange a field trip to the local solid waste disposal facility. Have the students seek information about the following questions:

1. What is the average volume of solid waste materials disposed of daily?
2. Has this volume been increasing or decreasing?
3. How much does it cost the community to dispose of solid wastes? How is the cost apportioned to the public?
4. Could some of the solid wastes be salvaged and recycled? How much would this save taxpayers in dollars in the long run?

5. Are there any related problems involving pollution, health and safety standards, or other environmental concerns?
6. Are there new or advanced techniques or facilities available that would minimize existing environmental problems related to solid waste?
7. How are other communities handling their solid waste disposal problem?

(This activity will be most meaningful if taught in cooperation with science teachers.)

REFERENCES:

STUDENT BOOKS

No specific student references are listed for this unit. Most of the information students will need is of a local nature, and thus can be best found through local sources. Included may be such items as:

Local histories - from public libraries, historical societies, etc.

Local plans - from state, city and county agencies, Chamber of Commerce

Local newspapers, particularly current but also historical

Local maps, current and historical

In the cases of Experiences 3, 4, and 5, most general science texts provide adequate basic student information of a technical nature; again, local information must be obtained from local sources. Cooperation with science teachers is recommended for any attempts at presentation of scientific information.

TEACHER BOOKS

As in the case of student references, the teacher will find it necessary to rely heavily on locally-produced and obtained data. Best sources include public libraries, various governmental and other planning agencies, and the Chamber of Commerce. The list below is of a general nature, typical of materials available which the teacher might use in obtaining general background information and information related to specific techniques.

Clawson, Marion, (editor). *Modernizing Urban Land Policy*. Baltimore, Johns Hopkins University Press, 1973.

Darling, F. Fraser, and John P. Milton, (editors). *Future Environments of North America*. Garden City: Natural History Press, 1966.

Jones, W. Ron. *Finding Community: A Guide to Community Research and Action*. Palo Alto: James E. Freel and Associates, 1971.

Khare, Ravindra S., Koika, James W. and Pollis, Carol A. *Environmental Quality and Social Responsibility*. Green Bay: University of Wisconsin - Green Bay, 1972.

Lavaroni, Charles W., O'Donnell, Patrick A., and Lindberg, Lawrence A. *Water Pollution*. Menlo Park: Addison-Wesley, 1971.

Leinward, Gerald, Editor. *The City as a Community*. New York: Pocket Books, 1970.

Meshenberg, Michael J. *Environmental Planning: A Selected Annotated Bibliography*. Chicago: American Society of Planning Officials, 1970.

Moran, Joseph M., Morgan, Michael D., and James W. Wiersma. *An Introduction to Environmental Sciences*. Boston: Little, Brown & Company, 1973.

Tilton School Water Pollution Program. *A Curriculum Activities Guide to Water Pollution and Environmental Studies* (Volumes I and II). Washington: Training Grants Branch, Water Quality Office, Environmental Protection Agency, 1971.

Warren, Ronald L. *Studying Your Community*. New York: Free Press, 1965.

Wurman, Richard Saul, (editor). *Yellow Pages of Learning Resources*. Philadelphia: Group for Environmental Education, Inc., 1972.

TEACHER DATA REFERENCE BOOKS

Teacher's Note

The following publications would constitute a nucleus of a data source collection for your school library. Secondary students should be able to use these sources with little difficulty. Junior High School teachers may find it necessary to simplify and summarize the relevant data for their students.

Congressional Quarterly Service. Congressional Quarterly Guide to Current American Government (Yearly Spring and Fall editions) Congressional Quarterly, Inc., Washington, D.C., 1974.

Economics Research Division, Development Department, State of Ohio. *Statistical Abstract of Ohio*, Columbus, Ohio, 1969.

Office of the Federal Register, National Archives and Records Service, General Services Administration. *U.S. Government Manual*, USGPO, Washington, D.C., 20402 ($4.00 - annual editions).

Nader, Ralph Congress Project, (Series). *Citizens Look at Congress*, (Individual Profiles available for U.S. Senators and Representatives), Grossman Publishers, Washington, D.C. ($1.00 each).

Rose, Albert H. *Ohio Government - State and Local*. Fourth Edition, Kendall/Hunt Publishing Company, Dubuque, Iowa. 1974.

Skinner, Richard. *Ohio Socioeconomic Data Book*. Market Research Associates, 207 Valley View Drive, Kent, Ohio, 1972.

U.S. Bureau of the Census, *Census of Housing: 1970, General Housing Characteristics*, Final Report, HC (1) - A37 Ohio. USGPO, Washington, D.C., 1971.

U.S. Bureau of the Census. *Census of Population: 1970, General Social and Economic Characteristics*, Final Report PC (1) - C37 Ohio. U.S. Government Printing Office, Washington, D.C., 1972. ($4.25)

U.S. Bureau of the Census. *Census of the Population: 1970, Number of Inhabitants in Ohio*. PC (1) A37 Ohio, USGPO, Washington, D.C., 1971.

U.S. Bureau of the Census. *County and City Data Book, 1972*. (A Statistical Abstract Supplement). U.S. Government Printing Office, Washington, D.C., 1973. ($12.50)

U.S. Bureau of the Census. *Historical Statistics of the United States, Colonial Times to 1957*. USGPO, Washington, D.C., 1960. Supplements are also available.

U.S. Bureau of the Census. *Statistical Abstract of the United States: 1973*, 94th Edition. USGPO, Washington, D.C., 1973. ($6.30) (Yearly editions available).

Warren, Roland L. *Studying Your Community*. The Free Press, New York, 1965.

POLITICS OF ENVIRONMENT

The activities presented in the following unit are intended to stimulate learning. It is not suggested that any of these activities is complete in itself. Until the human element is added, nothing can be determined about the effectiveness of outcomes of these experiences. The process requires that the teacher be willing to learn with his/her students, and that he/she be willing to learn from them.

These activities are structured. They are designed to accomplish certain objectives. The teacher is warned, however, not to force conclusions. Students may bring unexpected results. When that happens, the teacher is urged to work with the materials presented by the students. Questions may arise for which no one is prepared. The teacher is encouraged to explore those questions.

Depending upon the school's own environment, teachers are encouraged to develop their own examples and to use local conditions as the basis for the suggested activities. Realizing that materials are needed in rural, suburban, and urban areas, these structured activities are designed to be flexible enough to accommodate the needs of teachers in all areas. Ideally, the students will help design activities and identify areas in their own localities where investigation will provide useful materials.

Because this unit deals with environmental realities, the teacher is urged to accept each student's personal political, economic, and environmental orientation. No one conclusion is necessarily the correct one. Several conclusions may have equal validity. Part of the learning process may be to allow the students to realize that differing opinions can exist peacefully and that mutual respect is basic to the democratic process.

CONTRIBUTORS TO THE DEVELOPMENT OF THIS UNIT

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INSTRUCTIONAL OBJECTIVES:

1. To increase the individual student's awareness of himself and of his attitudes toward environmental issues.
   a. The student will become increasingly aware of his/her environment.
   b. The student will be able to perceive the community and environmental concerns.
   c. The student will increase his knowledge of what constitutes political, economic, and environmental concerns.
   d. The student will improve his ability to perceive and understand his community by listening and hearing.
   e. The student will become acquainted with the inadequacies of observation and communication.
   f. The student will be encouraged to develop a healthy skepticism toward what they see and hear.
   g. The student will be encouraged to deal with the attitudes they may have formulated.
   h. The student will become aware of his own limitations as an observer.
   i. The student will develop an awareness of the inaccuracies in eye-witness reporting.
   j. The student will improve his own listening abilities.

2. To increase student's awareness of problems inherent in the total political process, as it relates to environmental issues.
   a. The students will experience the problems inherent in the democratic process.
   b. The students will have an opportunity to reach agreement through compromise.
   c. The students will become familiar with group process techniques.
   d. The students will experience self-governing, responsible behavior.
   e. The students will participate in the decision-making process involving leadership roles.
   f. The students will develop criteria for task performance.
   g. The students will experience the legislative process.
   h. The students will participate in the rule-making procedures (process).
   i. The students will deal with the problems of rule enforcement.
   j. The students will consider the comparative values of positive and negative rewards.

3. To enable students to evaluate the reliability of sources of information.
   a. The student will read magazines and newspapers.
   b. The student will critically evaluate printed media.
   c. The student will deal with the validity of printed news.
   d. The student will watch news broadcasts on a regular basis.
   e. The student will develop techniques for critical evaluation of TV news coverage.
   f. The student will be encouraged to listen to radio news coverage on a regular basis.
   g. The students will develop techniques for critical evaluation of radio news coverage.
   h. The students will experience the process involved in gathering news sources and reporting.

4. To acquaint students with the public nature of government.
   a. The students will experience what governmental agencies exist and how to locate them.
   b. The students will discover their responsibility as observers at public meetings.
   c. The students will organize and participate in visits to public meetings.
   d. The students will become familiar with their local government.
   e. The students will share their knowledge and encourage others to participate in local government affairs.
   f. The students will demonstrate methods for approaching community groups.
   g. The students will gain an understanding of how local governments respond to community pressures.
   h. The students will be afforded an opportunity to determine community attitudes.
   i. The students will deal directly with the realities of local political structures.

EXPERIENCE #1:
AWARENESS AND PERCEPTION

OBJECTIVE:
To increase the individual student's awareness and perception of himself and his attitude toward environmental issues.

ACTIVITY A:
RECOGNITION OF POLITICAL AND ECONOMIC ACTIVITIES (Visual Survey)

Teacher's Note:
The time required varies according to the length of the trip and analysis of the observations.

Students, equipped with notebooks and pencils, singly or in groups, travel by foot, bicycle, school bus, private cars, or public transportation through the immediate community, recording what they observe of a political, economic or environmental nature.

The trip is divided into convenient segments, i.e., from school to main street, from main street to bridge, etc. These divisions may be written on the chalkboard or on posterboard. Each section is dealt with separately. Each student contributes his observations for each portion of the trip until all observations have been recorded under either economic or political headings, or both.

Students may report only obvious or different activities and may miss subtle or long-accepted activities. They may report the mail truck but miss the fact that the street itself is provided by the government. They may report the store's existence but miss the sign painter installing a new sign in front of the store. They may ignore the function of the bus upon which they are riding.

The purpose of the exercise is to help the students become aware of the pervasiveness of the government and the extent of economic activity and environmental implications. It may help them to become aware of their perceptual limitations. They may become more sensitive to the community.

A typical reaction is that students are amazed by what they observed but even more amazed by what they missed. They will discuss classifications, whether things are political or economic, and clarify their own thinking about the nature of those activities.

This is an interesting activity to repeat at the end of a study period. It provided a good beginning, as well as a good concluding activity. If it is to be repeated, be sure to save all observations from the first trip to be compared with those from the final trip.

Materials:
Notebook, pencils, and transportation if you do not plan a walking trip.

ACTIVITY B:
LISTENING SURVEY OF THE ENVIRONMENT AND THE IMPLICATIONS OF NOISE POLLUTION

Teacher's Note:
The time required varies, according to site chosen for activity and length of time devoted to analysis.

Students, with notebooks and pencils, either inside the classroom or outside in the community, record what they hear around them. Students are instructed to sit quietly and listen to all of the sounds around them for a period of 5 to 10 minutes. They are instructed to try to identify those sounds.

After the initial listening orientation period, students are instructed to write their identifications of sounds in their notebooks for two or three intervals of 5 minutes each.

All sounds identified during each 5 minute interval are recorded on either chalkboard or posterboard. The total environmental implications of each sound are discussed.

If the teacher desires, he may take a tape recorder with him and record the time period during which the students are listening. After the students have recorded their notes on the chalkboard or posterboard, the teacher may want to replay the tape to validate the students' observations.

The sounds most commonly recorded are sounds of voices, vehicles, airplanes, etc. Bells, footsteps, and radios are often ignored or, at least, not classified. A common reaction, again, is amazement at what was heard but more surprise at what was missed. The replaying of the tape recorder may be used to demonstrate to students the selectivity of their hearing. They will understand that their listening to one sound may have prevented them from hearing another.

Again, the conclusion that the governmental and economic process are totally pervasive is usually unavoidable.

Materials:
Notebook and pencils, tape recorder

ACTIVITY C: RUMOR CLINIC

Teacher's Note:
Group Size: Six participants and any number of observers. Time required: Thirty minutes.

Six participants are chosen from the group. Five of the six are asked to leave the room or to go somewhere where they cannot see or hear what is going on in the room.

The teacher either reads the message or shows the picture to the first participant. The message should be fairly brief, between six and eight sentences, dealing with a specific event, such as the construction of a nuclear power plant or a pollution report. The picture should be fairly detailed and should deal with some event. A series of pictures on a film strip is available from the Anti-defamation League.

The second participant is asked to return to the room. The first participant repeats what he has heard or seen to the second participant.

The third participant is asked to return and the second participant repeats to him what the first participant told him. The process is repeated until all of the participants have repeated the message.

The sixth participant is asked to write the message on the board after he has been told it by the fifth participant. The teacher then writes the original message on the board or shows the original picture again.

If the process has been taped, the teacher may replay the tape. A discussion of what happened by the observers and participants should follow.

If the teacher wants to use environmental examples, he might use slides depicting local environmental problems, such as a land fill area, strip mined area, factory smoke stacks, littered area, etc. If he prefers to use a message, he might write a brief description of some local environmental problem, or, to be more dramatic, an environmental disaster. Newspaper articles and news magazines provide materials for messages.

By the time the story gets to the sixth participant, it has lost and gained a great deal, depending on the biases of the story tellers. The message is often not identifiable as the one given to the first participant and the description of the picture usually resembles nothing seen before. Students often like to talk about what happened in the retelling, trying to understand why stories are distorted.

Students usually conclude that, in order to know what has happened, they will need to consult original sources as often as possible. They often conclude that they will have to watch and listen as carefully as they can if they are to avoid distorting facts themselves.

ACTIVITY D: LISTENING EXERCISES

Teacher's Note:

1. *Teacher should select topics from local environmental issues.*
2. *Attention must be given to local environmental problems and their relationship to the community.*

Group Size: Four members per group, any number of groups may participate. Time Required: Forty minutes.

Teacher writes four to six controversial statements on the board, i.e., women athletes should be allowed to compete with men on equal terms, city employees should be able to strike, etc.

Students are instructed to copy the statements on paper and indicate whether they Agree Strongly (AS), Agree (A), Disagree (D), Disagree Strongly (DS) with each statement.

The class is then divided into groups of four members. Each group member is allowed five minutes to discuss his opinion of any or all of the controversial issues. The other three members of the groups are to practice techniques of listening. They are instructed to focus their attention on the speaker by facing him and looking at him while he is talking. They are to restrict their interaction with the speaker to questions which are designed to draw out more information from him, not to express their agreement or disagreement with his views. Finally, they are to attempt to accept the speaker's opinion even though they may not agree with him.

After each member of the group has spoken, the group members are instructed to share with each other their views of the listening abilities of each member.

If time permits, the entire class may wish to discuss the results of the exercise, what was learned, and how individuals reacted to the experience.

Environmental examples of controversial statements:

All strip mining should be outlawed. Gasoline must be rationed. No cars shall be built requiring engines larger than four cylinders.

These statements may depend on current events or local happenings and the activity may be repeated as often as the teacher and students desire.

The exercise is designed to force opinion forming and, for that reason, no middle ground is provided.

The students usually discover that they have not been listening to each other and that listening is a very difficult thing to do. They often remark that, on controversial issues, they are so busy thinking up a reply to a position with which they disagree that they often do not hear everything that the speaker has to say. They often remark that it is an unusual experience to talk to people who are really trying to listen to what they have to say. Some kids remark that they thought it was frightening because no one had ever listened to them for five minutes before.

Materials:
Chalkboard or posterboard
Paper and pencils.

ACTIVITY E: VALUE DEFINITION (My Choices)

Teacher's Note:

Additional value activities may be found in Values Clarification, A Handbook of Practical Strategies for Teachers and Students, *by Sidney B. Simon, Leland W. Howe, and Howard Kirschenbaum.*

Many choice techniques lend themselves to environmental connotations. Especially helpful are "Things that I enjoy doing," "Either/or Forced Choice," "Rank Order," "Continuums," and "Selection Voting."

1. 15 Things I Like To Do

Ask the students to fold a piece of notebook paper in half lengthwise and number from 1 to 15 down the center fold. To the right of the fold, they are to take a few minutes to list 15 things they like to do. Assure them that the list is for their own information, that you will not collect it, and that they will not have to share the list with anyone else unless they want to. When they have completed their lists, you may give them a variety of keys to mark on the left hand side of the fold.

Keys may include such things as these: Mark an L.W. ("Lone-Wolf Activity") next to the item if it is something you usually do alone, a "T" (Together) if it is something you usually do with other people; put a "M" (Money) sign next to the item if it costs money every time you do it; mark an E next to it if it requires energy other than human effort to do it, etc. You may use up to 10 keys.

When you have completed keying the list, ask the students to look over what they have done and, at the bottom of the paper, complete a sentence which begins "I learned that I. . ." Ask if they would like to share their "I Learned" statements.

Students frequently will discover things about themselves that they had not put together before. They may discover that they profess one thing, but in practice actually do another, such as the environmentalist who looks at his list and discovers that most of the things that he likes to do require the use of energy and resources.

2. Either/or Forced Choice

Clear the room of furniture as much as possible. Students will need room to move freely from one end of the room to the other. To begin, ask the students to stand in the middle of the room. Put one part of two opposites at each end of the room and ask the students to go to the end of the room which best describes them. No one is to remain in the middle. They must choose between the choices. When they reach the end of the room, they may discuss their choice with the other people they find there. While they are involved in the discussion, the teacher posts new choices. The process is continued until between five and ten choices have been made, depending upon the patience of the students and the teacher. The students are then asked to analyze what kind of person their choices said they were.

Forced choices may include asking students to decide whether they are more like mountains than valleys, more like Volkswagens than Cadillacs, more like summer than winter, more like gourmets than potato chip eaters, more like spenders than savers, more like insiders than outsiders, etc. This is an exercise that students often like to participate in by thinking up either/ors for the class to respond to. It is an exercise which is utterly flexible and adaptable to any circumstances.

3. Rank Order

The usual number of items in rank order is not more than three, although, in certain circumstances, four items may be useful. Ask the students to write down the items and then number them from one to three to rank them. It seems to be more effective to have the students write out their ranking because they seem to have more of an investment in their choices if they do. After each ranking, the students may want to discuss why they ranked items as they did.

Items to be ranked might include these: What is more desirable to you, a wilderness area, a national forest in which selective lumbering is allowed, or a tree farm where trees are grown to provide timber? What do you consider the greatest problem facing the nation today: overpopulation, inflation, the energy crisis? Would you prefer to travel by automobile, passenger train, airplane?

This is also a very flexible activity. The teacher may choose items to be rank-ordered which will focus attention on the issue of his/her choice. If the students wish, they may also create items to be rank ordered. The discussions following the rankings often enable students to clarify their positions on the subjects ranked.

4. Continuums

A continuum is nothing but a line going from one extreme to the other upon which students may be asked to find a position with which they are comfortable. This can be done in several ways. A line representing the continuum may be described along the length of the room and students may be asked to place their physical bodies on the appropriate place. A line may be drawn on the chalkboard and students may be asked to place their names in the appropriate place, or they may draw the line on their own notebook paper and locate themselves. After they have completed their choice, they may be asked to share the bases upon which they positioned themselves.

A continuum for the energy crisis might be this:

Conservation Clara - Back to the caves	Technology Ted - Science can do anything

It is often helpful to take out the center of the continuum so that the students will have to make a choice.

This technique is appropriate to many subjects. Teachers and students can create their own.

5. Selection Voting

Selection voting is a basic priority selection technique. It is simple and adaptable to any situation. It simply requires the teacher to think of a series of questions which will help students define their own attitudes on whatever subject is being evaluated. Students may raise their hands if they agree with the question and may wave their raised hands if they agree enthusiastically. They may make the thumbs down signal if they disagree and may wave their downturned thumbs if they disagree emphatically. Students have the option to not vote by folding their arms across their chests. The students should be asked to signal their opinions clearly and to look around the room to see how other people are voting. The subject may be discussed after a series of questions have been asked, giving the students the opportunity to explain why they voted as they did.

Some sample questions might be:

a. Do you believe that people should be asked to limit the amount of power they use voluntarily?
b. Will you voluntarily limit the amount of power you use?
c. Do you approve of gasoline rationing?
d. Would you buy black market gasoline if you needed more than you were given?
e. Can you get along with less than you have now?
f. Do you believe that other people will give up some of the things they have?

EXPERIENCE #2: GROUP PROCESS

OBJECTIVE:
To increase student's awareness of problems inherent in the environmental interactions with scientific, social, economic, and political processes.

ACTIVITY A: DEVELOPING GROUP CONCENSUS

Teacher's Note:
Group Size: Ten to twelve members per group. More than one group may participate at the same time. Time Required: Forty minutes.

The teacher writes a controversial statement on the board, i.e., all schools should be closed for three months during the winter to conserve fuel, gasoline should be rationed, strip mining should be abolished, etc.

The teacher instructs the groups that they are to come to a consensus (an agreement with which each member of the group may agree somewhat if not completely) on some version of the statement. They may change the wording of the statement in any way they choose, but, when they are done, all members of the group must agree to accept the statement.

Allow about 20 minutes for the groups to reach consensus. Have a spokesman for each group read the statements upon which they agreed. Have each group explain the process by which they reached consensus. See if the class can reach agreement on one statement.

Discuss what happened in trying to reach agreement. What kind of attitude helped reach consensus? What kinds of attitudes interfere?

Students often cannot reach agreement, especially if the statement happens to involve a matter of principle so far as several of the students are concerned. If there are members of the group who will not compromise, the group cannot reach consensus. The purpose of the exercise is to help students to understand that, in order for a democratic society to operate, individuals must be willing to compromise, and that persons who take unyielding positions may frustrate the purposes of agreement.

Materials:
Chalkboard or posterboard
Paper and pencils

ACTIVITY B: CHOOSING GROUP LEADERS

The teacher instructs the class that it is to organize itself into a functioning government. It is to determine what kinds of leaders it needs to accomplish its task, which is to learn as much as it can about government and economics related to environmental concerns. It will need to determine what kinds of jobs need to be done and what the qualifications should be for each job.

This process will need some direction on the part of the teacher. If the class handles the process well, it will have functioning leadership within its ranks. If it does not, its failure can become a learning situation. Either way, the class should be encouraged to analyze its procedures, which of its members functioned in what ways, who the leaders were, who the followers were, and what happened.

Some student groups have a tendency to elect leaders on the basis of personal popularity, without sufficient consideration to the requirements of leadership. If the students fail to select someone who can help them achieve their purpose, it is important that they consider the criteria they employed in the selection of their leaders. If, on the other hand, they have selected strong leadership to the extent that they object to the authoritarian attitude of their leaders, they should attempt to analyze the reasons that they may have had for giving up so much control over their own responsibilities. The discussion may lead into a meaningful discussion of environmental issues or conservation of natural resources in a democratic society. It is important that the teacher allow the group to discover for itself the qualities of its leadership, and it is equally important that the teacher provide alternatives for a group wishing to make some change in its leadership.

Materials:
Chalkboard or posterboard
Paper and pencils

ACTIVITY C: DEVELOPING AND APPROVING RULES FOR GROUP OPERATION

Having elected its leaders, the class is now encouraged to develop rules to govern its behavior and operation. It must consider what it is attempting to do and what means it may wish to employ to see that its goals are accomplished. The class should be encouraged to differentiate between rules governing conduct and rules dealing with organization to achieve results.

Rules should be recorded and published for the information of all members of the class.

This activity permits students to discover the difference between procedural and substantive due process. If the rules that they make deal primarily with methods for governing the conduct of the group, they are making rules dealing with procedures. If their rules determine who shall do what and under what conditions, how non-achievers will be treated, and what constitutes compliance with the wishes of the group, then they are dealing with procedural due

process. If, on the other hand, the rules deal with what is to be investigated and the direction that the investigation is to take, then the rules treat the substance of the task and are substantive due process.

ACTIVITY D: ENFORCEMENT OF RULES

The class must now determine what methods it intends to employ to see to it that its rules are obeyed. The teacher should encourage the class to deal with questions concerning majority rule and minority rights and to determine the extent of coercion that it is willing to accept, whether its penalties deal with the problems, and if it might wish to revise some of its rules to invite more voluntary compliance.

This exercise may also get into alternatives to punishment as well as discussions of grades as motivators, etc.

It is hoped that the student will realize that the best way to enforce rules is for the members of that particular society to participate in the formulation of the rules, and because of their awareness of the rules and of their importance, to be willing to comply with them voluntarily. It would also be helpful if the groups could understand that their abilities to achieve as a group depend on the willingness of each member to do his share.

Materials:
Chalkboard or posterboard
Paper and pencils

EXPERIENCE #3: EXAMINING THE MEDIA

OBJECTIVE:

To enable students to evaluate the reliability of sources of information.

ACTIVITY A: COMPARISONS OF PRINTED MEDIA

Teacher's Note:
Group Size: Four members to a group, any number of groups. Time Required: At least two weeks, longer if possible.

Each group member is to follow one news magazine or newspaper, selecting an environmental issue. The students who are reading newspapers are to keep copies of the lead articles in the daily papers and feature articles in the Sunday paper. They are to clip all pertinent editorials.

Students who are responsible for news magazines will try to locate the comparable stories in their magazines and compare the type of coverage and treatment given by the national news magazines and the local newspapers.

If records are kept over a long period of time, the students may get some idea of the amount of space local papers devote to local, state, and national news and what kind of local stories make national news.

If more than one newspaper is published in the area, a comparison of coverage should be made.

Each group should be responsible for keeping a scrapbook of its findings to be shared with other groups at the end of the study period.

Materials:
News magazines and newspapers
Scissors and paste

ACTIVITY B: COMPARISON OF TELEVISION NEWS COVERAGE

Teacher's Note:
Time Required: At least two weeks, longer if possible.

The class should be divided into teams which will take the responsibility for covering the news coverage on all local TV channels. If there are three channels, the class should be divided into three teams and the teams should be organized to cover evening and nighttime news broadcasts, with specific attention paid to environmental issues.

The class should devise a standard viewing form, which should include information regarding lead news stories, features, human interest stories, etc., as well as providing space to record length of time devoted to local, state, and national news, editorials, and commentaries.

The material from the standard viewing forms should be recorded in a notebook which serves as a viewing log. After several weeks of data have been gathered, the class may wish to analyze its findings and determine if any patterns are apparent or if any conclusions can be drawn.

Materials:
A standarized observation sheet may be developed by students.

ACTIVITY C: COMPARISONS OF RADIO NEWS BROADCASTS

Teacher's Note:
Time Required: At least two weeks, longer if possible.

Radio listening can be done at the same time and in the same way as TV monitoring is done. The class may select several radio stations in the area, based on the appeal of the station's format — rock, "good music," talk, etc. — to listen to. If tape recorders are available, the news broadcasts can be taped and compared. If recorders are not available, the class may prepare a standard listener's form.

Data may be recorded in a notebook serving as a listener's log and analyzed periodically to see if there are any conclusions which may be drawn.

Materials:
A standardized listener's form may be developed by students.

ACTIVITY D: STUDENT PREPARATION OF NEWS STORIES

Teacher's Note:
Group Size: Teams, not larger than eight nor smaller than four members. Any number of teams can operate at the same time.

The class is divided into news gathering teams. Each team is to choose a different environmental topic, investigate the story, find sources of information, and write a news story. If video-tape equipment is available, the class might want to make its own TV news broadcast; if tape recorders are available, it might make a simulated radio news broadcast; if not, duplicating equipment can be used to produce a class newspaper.

After the project has been completed, the class can analyze its methods and choices in gathering and analyzing news.

Materials:
Video-tape recorder, if available
Audio-tape recorder, if available
Duplicating equipment

EXPERIENCE #4:
FINDING OUT ABOUT LOCAL GOVERNMENT

OBJECTIVE:
To acquaint students with the public nature of local government in dealing with environmental concerns.

ACTIVITY A: FINDING LOCAL GOVERNMENT AGENCIES

In order to acquaint students with local government and local government agencies, especially those that deal with environmental concerns and decision making, the students can start with the local telephone book and list the number of governmental agencies in their community and surrounding area. The class can be divided up into teams which can investigate different bodies and agencies and make reports to the entire class. The students, by writing, calling, or inviting local government representatives to class, should investigate the functions, structure, personnel, and activities of each agency. The teacher can provide an overview of local government while the class conducts their individual investigations. Students should be encouraged to discover the locations and meeting times of various agencies that are open to the public and that may also be considering environmental issues.

Materials:
Telephone book
Telephone
Local maps

ACTIVITY B: VISITING PUBLIC MEETINGS

Teacher's Note.
Group Size: Small groups

Students, after determining what meetings are open to the public, can plan and organize one or more trips to attend meetings of these bodies. Ideally, they could attend a city council meeting, a school board meeting, a meeting of the General Assembly, and a trip to Washington. There is no reason to assume that the students cannot make all the plans and arrangements themselves. Not only will they have had the experience of attending the meetings but of making the plans and arrangements as well.

If public hearings are planned in the local area by an investigating committee of the General Assembly or by an agency such as the Ohio Environmental Protection Agency, the students should be encouraged to attend.

The students should be encouraged to report back to the class. Reports could include the issues discussed, various points of view on the issues, any decisions made on the issues, and a general description of the meeting.

Materials:
Transportation

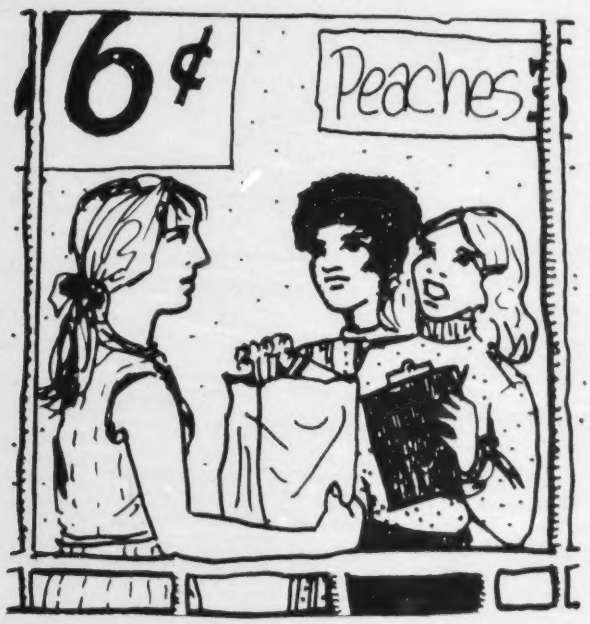
ACTIVITY C: IDENTIFYING POINTS OF VIEW AND ISSUES

Teacher's Note:
Group Size: Class divided into three groups.

Governmental agencies make decisions with respect to the merits of an issue and the varying amount of concern and influence of various people and groups within the community. The students, with the help of the teacher, should identify one to three environmental issues or problems that affect the community and that require local governmental decisions.

Once the issues have been identified by the class, the students can make plans to survey public opinion

and determine various community attitudes and points of view on each issue. In order to expose the students to the diversity of conflicting thought and solutions for each issue, it is suggested that the class conduct three separate surveys in the community. Survey forms should be developed by the students in class prior to the actual survey.



Group 1: Survey of the General Public
One method of surveying public opinion would be for the students to interview people at a local shopping center or food market. Permission should be secured from the store manager prior to the survey. Advance planning in class should concentrate on the development of interview questions that will elicit the type of information desired. Students should also discuss various ways to approach people during the survey. Once the survey has been completed, the students can analyze the responses and list the differences of opinions and solutions offered for each environmental issue. The results should then be shared with the rest of the class.

Group 2: Survey of Community Organizations and Institutions
In every community there exist organizations that will be affected by environmental decisions. Some organizations merely express opinions on issues while others become actively involved in influencing local decisions in one direction or another. Students should identify potential organizations in the community that might express concern or take a position on the environmental issues being surveyed. Potential organizations might include the following: local Chamber of Commerce, industrial development corporations, neighborhood associations, environmental and conservation groups, local boards of realtors, labor unions, business and trade associations, banks and savings and loan institutions, utility companies, local industries, and others. The students should, with the help of the teacher, select groups with probable interest in the issues and identify the group's spokesman and addresses. The students can then proceed with either a personal, telephone, or mail survey of their opinions on the environmental issues.

Group 3: Survey of Local Political and Governmental Organizations and Individuals.
People have organized and aligned themselves with political parties to influence and control governmental decisions at all levels. It is logical to survey the elected and appointed officials in both the formal local government structure and those involved in the major political parties. Locating the names, addresses, and/or phone numbers of local people involved in the political process can be a major activity in itself. A survey of their positions can be conducted and the results analyzed and compared with the results from the other groups surveyed.

The teacher can plan additional activities based upon the type of information revealed by the survey and the student's ability to deal with more complex analysis of the data.

REFERENCES

TEACHER DATA REFERENCE BOOKS

Teacher's Note:
The following publications would constitute a nucleus of a data source collection for your school library. Secondary students should be able to use these sources with little difficulty. Junior high school teachers may find it necessary to simplify and summarize the relevant data for their students.

Congressional Quarterly Service. *Congressional Quarterly Guide to Current American Government* (Yearly Spring and Fall editions) Congressional Quarterly, Inc., Washington, D.C., 1974.

Economics Research Division, Development Department, State of Ohio. *Statistical Abstract of Ohio*, Columbus, Ohio, 1969.

Office of the Federal Resister, National Archives and Records Service, General Services Administration. *U.S. Government Manual*, USGPO, Washington, D.C., 20402 ($4.00 — annual editions).

Nader, Ralph Congress Project, (Series). *Citizens Look at Congress*, (Individual Profiles available for U.S. Senators and Representatives), Grossman Publishers, Washington, D.C. ($1.00 each).

Rose, Albert H. *Ohio Government — State and Local.* Fourth Edition, Kendall/Hunt Publishing Company, Dubuque, Iowa. 1974.

Skinner, Richard. *Ohio Socioeconomic Data Book.* Market Research Associates, 207 Valley View Drive, Kent, Ohio. 1972.

U.S. Bureau of the Census, *Census of Housing: 1970, General Housing Characteristics*, Final Report, HC (1) — A37 Ohio. U.S.G.P.O., Washington, D.C. 1971.

U.S. Bureau of the Census. *Census of Population: 1970, General Social and Economic Characteristics*, Final Report PC (1)—C37 Ohio. U.S. Government Printing Office, Washington, D.C. 1972. ($4.25)

U.S. Bureau of the Census. *Census of the Population: 1970, Number of Inhabitants in Ohio.* PC (1) A37 Ohio, U.S.G.P.O., Washington, D.C. 1971.

U.S. Bureau of the Census. *County and City Data Book, 1972.* (A Statistical Abstract Supplement). U.S. Government Printing Office, Washington, D.C. 1973. ($12.50)

U.S. Bureau of the Census. *Historical Statistics of the United States, Colonial Times to 1957.* U.S.G.P.O., Washington, D.C., 1960. Supplements are also available.

U.S. Bureau of the Census. *Statistical Abstract of the United States: 1973*, 94th Edition. U.S.G.P.O., Washington, D.C. 1973 ($6.30) (Yearly editions available).

Warren, Roland L. *Studying Your Community.* The Free Press, New York, 1965.

COMMUNITY PROBLEMS

Man is a social being, many of the decisions he makes are community based rather than individual-oriented. By thoroughly understanding the functions and structure of communities, citizens will be better able to make their opinions count and get action on problems. A knowledge of where to start and what to do in the problem-solving process will lead to much easier citizen participation in decisions affecting both the individual and his environment.

This unit is not designed to be taught. It is meant to be experienced by the students and the teacher. The role of the teacher is that of a resource person, an adult who might know where to look and might be able to think of some good questions to ask. The students and the teacher are to investigate, question, survey, create information, analyze, evaluate, and plan courses of action. Most of the material in this unit cannot be found in a text book. It must be extracted from the community itself.

It seems necessary to establish initially a definition of what is being investigated. While defining the terms, *community* and *problem*, it may be useful to consider the philosophical concepts involved. Defining *community* must be a primary concern. The preliminary activities are designed to aid students in exploring not only the tangible and measurable realities of a specific community, but the concepts of what constitutes a community of any sort.

Problem is another term which requires definition. What may constitute a problem in one area, or for one individual or group of individuals in the population, may not be a problem in another area or among another population. Within a group, defining and delineating a problem may be far more difficult than one might believe. For example, the threat of a communist take-over of the American government poses a problem for some but seems unimportant, or even irrational, to others. A street light on the corner of one street may be of utmost concern to the people on that street, but unimportant to people a street or so away.

These activities are designed to aid students in discovering and defining problems. They should be considered as methods of approaching the situation, not as inflexible blueprints for action. Students should feel free to decide what a problem is and what is a problem.

Finally, students need to know that there are things that can be done. They need to be encouraged to look at problems, not as insurmountable obstacles, but as situations to be dealt with energetically and creatively. They are learning a process, a method they may continue to apply for the rest of their lives to investigate and deal with their environmental problems.

Any study of community problems should be based on an in-depth inventory of the community itself. If time permits, the teacher may wish to conduct the activities in the Environmental Inventory Unit.

INSTRUCTIONAL OBJECTIVES:

1. The students will determine the definition of the terms *community* and *problems*.
2. The student will discover ways of obtaining or developing information about communities.
3. The students will become acquainted with a specific community and the channels for change therein.
4. The student will select a specific problem in a community, and actively work toward the elimination of the problem.
5. The student will evaluate his efforts with regard to the total problem.

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DEVELOPMENT OF THIS UNIT

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EXPERIENCE #1:
INVESTIGATING "COMMUNITY"

OBJECTIVES:

1. The students will define what constitutes a community.
2. The students will identify different types of communities.
3. The student will begin examination of the organization, and roles of components of various communities.
4. The students will select one specific unit to study in greater detail.

Teacher's Note:
If lack of time is a problem, the teacher may wish to begin with Experience #2: Investigating a specific community. If time is not a problem, Experience #1 will help lead the students into Experience #2.

ACTIVITY A:
BRAINSTORMING — WHAT IS A COMMUNITY?

Teacher's Note:
During the course of this activity, it is hoped that the students will conclude that a community consists of individuals who have something in common. They should have a fair list of what some of these things might be. This awareness is basic to the following activities. If the students do not see this relationship initially, the teacher may have to help them come to this recognition by asking additional questions.

Group Size: Any number of groups of not more than eight members. Time Required: Until ideas are no longer being generated or until the time for class is over.

Students are arbitrarily divided into groups of not more than eight members. Each group selects one member to record its ideas. The teacher instructs all of the students that the task is to think of as many ideas as possible about what constitutes a community, but not to discuss or evaluate any of those ideas. That will be done later.

When the groups report that they are done, the teacher asks each group recorder to read the list of ideas for that group. He/she records the ideas on the board.

Materials:
Chalkboard or posterboard

ACTIVITY B:
IDENTIFYING AND DEFINING COMMUNITIES, HUMAN AND OTHER

Teacher's Note:
Group Size: Any number of groups of not more than eight members (may be the same groups as in the previous activity.) Time Required: As long as necessary to reach a satisfactory conclusion.

Each group is to receive a list of the ideas developed during the previous brainstorming session. The teacher will instruct the groups to select, once again, a member to serve as recorder for the work that the group does. The groups are instructed to identify as many communities as they can, i.e., the school or village communities, and to define what it is that makes it a community. In the case of the school, the common bond is the purpose of the school, that is, to provide an education for the people who go there. They may deal with either human or other natural communities. If necessary, the teacher may impose a time limit.

When the groups have completed their work, the teacher will ask the recorder for each group to read the list of communities that group has identified and their description.

Materials:
Paper and Pencil

ACTIVITY C:
DIAGRAMMING AND DESCRIBING COMMUNITIES

Teacher's Note:
Group Size: Any number of groups of eight (may continue established groups). Time Required: One class period.

If the students are not familiar with organizational charts, the teacher may want to take a few minutes to describe what they are and to show the lines of responsibility and interconnections which may be demonstrated in each organization so described.

Each group should choose one community to prepare a diagram for and to attempt to describe graphically. The idea is to prepare a visual framework to provide direction and location for future investigations.

When the groups have completed their diagrams, they should submit them to the class for evaluation, suggestions, and reworking.

Materials:
Paper and pencils
Large posterboard and magic markers for each group.

EXPERIENCE #2:
COMMUNITY STUDY

OBJECTIVES:

1. The students will determine what information needs to be known about the community and where to obtain it.
2. The students will develop skills in investigating and obtaining information.
3. The students will obtain information needed to study the community.

ACTIVITY A: SELECTING A COMMUNITY TO STUDY

Teacher's Note:
Time Required: One class period.

The teacher should list on the board the communities which have been discovered by the various groups and members of the class in Experience #1. After all

of the communities have been listed on the board, the class should discuss the relative merits of each one as a subject for future, intense study. They should be instructed to take into consideration the availability of material, the complexity of the community, and the limitations placed on the movements and activities of the students by the school itself. One community should be selected by the class for future study.

Materials:
Chalkboard

ACTIVITY B: BRAINSTORMING — WHAT KINDS OF THINGS DO WE NEED TO KNOW ABOUT THE SPECIFIC COMMUNITY?

Teacher's Note:
Time Required: At least 30 minutes.

If the previous activities have been followed, the input to this brainstorming session should be greatly enriched. The teacher should be able to act only as recorder, since most of the ideas can be generated by the students. If this is an initial activity, the teacher may have to assist by asking questions to keep the ideas coming.

When the ideas are exhausted, the class should turn its attention to grouping and categorizing the ideas, i.e., what do we need to know from social, political, economic, and environmental points of view? Some time should be spent in looking at how these various aspects of the study may be, or are, interrelated.

Materials:
Chalkboard or posterboard

ACTIVITY C: BRAINSTORMING — WHERE CAN INFORMATION ABOUT THE COMMUNITY BE OBTAINED?

Teacher's Note:
The teacher may wish to follow this exercise with some instructions about populations and sampling techniques. This would depend on the teacher's evaluation of the readiness of the students and the amount of time available.

Again using the brainstorming technique, students should list sources of information concerning the community. These might include libraries, social organizations, planning commissions, etc. Using this list, students should obtain addresses, names of contact persons, or phone numbers of the institutions selected.

Materials:
Chalkboard, Local Phone Books or Directories of Community Groups.

ACTIVITY D: FIELD WORK

Teacher's Note:
As with all trips away from the school, this project should be cleared with the school administration.

Group Size: Any number of groups of not more than eight members.

Depending on the type of community being studied, students may need release time from school to complete their field work. They may have to go to libraries outside of the school, to governmental offices, to business concerns, or to public and private organizations, depending upon what community they have chosen to investigate. If, for example, they are studying their school district, they may want to go to central administration, to the individual schools, and eventually to the Ohio Department of Education. They may wish to contact their district's teachers' organization and the Ohio Education Association or the Ohio Federation of Teachers.

If students cannot easily leave the building to make these contacts in person, they should be encouraged to make phone calls and to write letters asking for information.

Students should be encouraged to collect all of the information they determined to be necessary. It will be evaluated and analyzed later. The teacher may advise the students to follow up leads to additional sources.

Materials:
Notebooks and pencils.

ACTIVITY E: ANALYZING AND EVALUATING INFORMATION

Teacher's Note:
Group Size: The same small groups which gathered the material.

The teacher may wish to take some time to discuss the relative merits of various sources of information. He/she may also wish to help each group develop a set of guidelines for its own uses. Students should learn the difference between original and secondary sources. The teacher may wish to suggest that this might be the initial sorting that the groups might wish to make.

Each group will have the responsibility of analyzing its own material and evaluating it from a qualitative as well as a quantitative point of view. It will then prepare a report to the rest of the class. This report may take whatever form the group decides. The teacher might suggest the use of charts, tables, and displays, again determined by what the group is studying.

Materials:
File folders
Notebooks and pencils

ACTIVITY F: CONSTRUCTING A MODEL OF THE COMMUNITY

Using techniques developed in previous activities, the students may create an organizational chart representing the framework of the community they are studying. They may then proceed to fill out the framework with the more detailed material they have gathered. The model they create should either be detailed itself or refer to available material. This will depend on the size and complexity of the community under study. A small school community would require little more than a simple diagram. A large city would require many supplementary charts and diagrams. The teacher should guide this activity according to the complexity involved. All source material should be well organized and readily available for retrieval when needed.

Material:
Chalkboard or posterboard

EXPERIENCE #3:
DECIDING WHAT CONSTITUTES A PROBLEM

OBJECTIVES:

1. The students will develop a definition of the term problem.
2. The students will identify different classifications of problems.
3. The students will select a problem area to work on from within the community studied in Experience #2.

ACTIVITY A: BRAINSTORMING — WHAT CONSTITUTES A PROBLEM

Teacher's Note:
Time Required: At least 30 minutes.

This method is employed to generate as many ideas as possible. The teacher may serve as recorder, but should avoid making or appearing to make any judgements on the validity or merits of an idea. The teacher may, from time to time, need to inject a few ideas of his/her own to keep the exercise going. When all of the ideas have been exhausted, the teacher may wish to conduct a discussion to clarify some of the ideas which have been presented.

This could include such areas as criteria that all problems have in common and how problems might be classified (economic, social, political, environmental).

ACTIVITY B: CHOOSING A PROBLEM AREA FOR CLASS CONSIDERATION

Teacher's Note:
Group Size: Any number of groups of not more than eight members.

Each group should determine a problem which they feel is present in the community studied in Experience #2. After selecting the problem, the group will prepare a position paper stating why they think it is a problem and present it to the class.

After listening to the position papers, the class can select one problem on which to concentrate.

Materials:
Paper, pencils, and chalkboard.

EXPERIENCE #4:
DEALING WITH THE PROBLEM

OBJECTIVES:

1. The students will determine a course of action for dealing with the problem selected in Experience #3.
2. The students will determine the position of community groups and officials concerning the selected problem.

ACTIVITY A: BRAINSTORMING — WHAT CAN BE DONE ABOUT THIS PROBLEM?

Teacher's Note:
Time Required: One class period.

The teacher may need, from time to time, to direct the process into the realm of reason. It is difficult to make a differentiation between creativity and unreality. The teacher may prefer to allow the students to give free rein to their imaginations.

The teacher will serve as recorder and write all suggestions on the board. When the ideas are no longer being generated, the teacher may want to discuss some or all of the suggestions from the point of their feasibility.

Materials:
Chalkboard

ACTIVITY B: DETERMINING POSITIONS OF COMMUNITY FORCES

Teacher's Note:
Group Size: Any number of groups of not more than eight members.

The students, in their groups, are to decide what groups in the community are involved in the problems they have selected to investigate. They will make three columns on the board. One will list those people and groups on one side of the issue, a second will list those on the other side, and the third is for the undecided or unknown. The students may discover that there are more than two positions possible in dealing with that particular problem. If that is their determination, they are to construct whatever columns are needed. It is important to determine where as many groups and individuals in the community stand on the issue as possible.

This may involve contacting the groups either in person or by telephone, reading literature published by the group, having outside speakers come to the classroom, or following news articles about community groups.

When each group has completed its analysis, it will present its findings to the rest of the class, and together they will construct one final analysis.

Materials:
Notebooks and pencils
Chalkboards and/or posterboard

ACTIVITY C: SIMULATION

The simulation involves a community hearing on the problems. Students are to play the roles of the groups they have determined to be involved in the problem they have selected. The teacher will determine how students will be selected for each role. They may volunteer, be selected by the class, or be appointed by the teacher. Each role will research its own position. The teacher may allot additional time for this research if he/she feels that the available material, already gathered, is not sufficient to support a good simulation.

When roles have been determined and when the players are fully informed, the simulation may begin. The teacher may choose to structure the activity, or he/she may allow it to take whatever free style direction it may choose. A structured situation would allot time to each speaker to present his point of view, provide a schedule for speakers, and limit debate and discussion of each role. A totally free form approach might let the students decide how the entire hearing will be conducted.

At the conclusion of the simulation, the class should meet together to review what happened during the simulation.

Materials:
Depending on what is available, the teacher may desire to equip the class with sound equipment, tape recorders, video tape equipment, etc.

ACTIVITY D: SELECTION AND DEVELOPMENT OF THE ACTION PROGRAM

Teacher's Note:
Group Size: Any number of groups of not more than eight members.

Using all materials so far developed on the composition of the community, the various groups and members of the community, and the attitudes of those groups as revealed in the community position analysis and simulation, each class group should prepare a position paper on a recommended course of action.

The position paper should deal with realistic possibilities, things that can be done by the community and by the students themselves, and should be sufficiently detailed to include specific actions dealing with specific groups and individuals in the community.

Each group will present its position paper to the entire class. After presentation and thorough discussion, the class will proceed by a predetermined method to choose which course of action it intends to take. It may select one presentation or parts of several, creating a new program. Each member of the class should be allowed to determine how much of a commitment he has to the program and to declare what he is willing to do to further the cause.

The implementation, obviously, will depend upon what the action program calls for.

Materials:
Chalkboard, and/or posterboard
Pencils and paper

EXPERIENCE #5:
EVALUATION OF THE ACTION PROGRAM

OBJECTIVE:

The students will evaluate the actions taken.

ACTIVITY A:
REPORTS FROM ACTIVE PARTICIPANTS

Each participant will be given an opportunity to report to the class on the actions he took and how they were received. He will submit himself to any questions the other members of the class may have. If, for example, one of the actions included a letter writing campaign, the writer would be expected to share copies of the letters he wrote and any answers he may have received. If it were a door-to-door campaign, he would report where he went, what he said, and what kind of response he received.

Materials:
Tape recorder, if available.

REFERENCES:

TEACHER DATA REFERENCE BOOKS

Teacher's Note:
The following publications would constitute a nucleus of a data source collection for your school library. Secondary students should be able to use these sources with little difficulty. Junior high school teachers may find it necessary to simplify and summaries the relevant data for their students.

Congressional Quarterly Service. *Congressional Quarterly Guide to Current American Government* (Yearly Spring and Fall editions) Congressional Quarterly, Inc., Washington, D.C., 1974.

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Skinner, Richard. *Ohio Socioeconomic Data Book*. Market Research Associates, 207 Valley View Drive, Kent, Ohio. 1972.

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U.S. Bureau of the Census. *Census of the Population: 1970, Number of Inhabitants in Ohio*. PC (1) A37 Ohio, U.S.G.P.O., Washington, D.C. 1971.

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FUTURISM

This unit attempts to consider the stress of technological change to which man will be continually subjected and how man will adapt to it. Some writers feel that man is on the threshold of a new and greater freedom due to the anticipated increasing diversity of future technological achievement. Other writers feel that man will be so overwhelmed by his incredible range of choices and the complexity of issues that he will willingly hand over his freedom, with its confusion, for standardization and dictatorship.

The concepts form a progression. Depending on the maturity of students, most classes should be able to consider even the final concept. The unit deals with technological change first because it is the easiest to understand, and this provides a framework for later discussion. The unit then proceeds a sociological and psychological change. Finally, the question of freedom in tomorrow's automated, complex world is considered.

The subject of futurism is quite relevant for your students because they will only be approaching middle age by the year 2000. It is imperative that they can cope with the stress caused by the profusion of technological advances. This will be a fast-changing world in which they must preserve freedom and humanity while adjusting their lifestyles to comply with society.

Teacher's Note:

In teaching and evaluating this unit, the teacher must keep in mind the maturity of his students. He must be realistic in evaluating the students' varying abilities to interpret, recognize, solve, judge, and participate in this type of unit.

The success of this unit depends on teacher and student participation and experiences with such things as "buzz sessions, "dramatic" teaching techniques, role-playing, brainstorming, game playing, and group interaction.

Teachers on the seventh and eighth grade levels, particularly, should feel free to delete or change materials that would be too mature for their students.

CONTRIBUTORS TO THE DEVELOPMENT OF THIS UNIT

Author ..... Linda Tricarichi
Editor ..... Laurence E. Pennell
Revisor ..... Angela P. Buller

INSTRUCTIONAL OBJECTIVES:

The student will:

1. Clarify his understanding of common terms.
2. Project life in the future as he relates to it.
3. Find information dealing with the future.
4. Learn to interpret verbal and pictorial materials represented.
5. Present materials concerning the future in a creative way.
6. Give ideas on the future in the form of a speech or drama.
7. Estimate future consequences implied in data.
8. Apply concepts to theoretical future situations.
9. Recognize logical fallacies in reasoning.
10. Evaluate the relevance of data pertaining to the future.
11. Propose solutions to projected problems.
12. Integrate learning from different areas into a plan for solving a problem.
13. Judge the adequacy with which conclusions are supported by data.
14. Judge the value of an idea or invention by use of internal criteria.

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EXPERIENCE #1:
INTRODUCTION TO UNDERSTANDING AND COPING WITH CHANGE

OBJECTIVE:

The student will understand and cope with the fact that his environment will be changing at an alarming rate.

ACTIVITY A:

Have conversations, either as buzz groups or as open class discussion. Establish that students already have many concepts about the future from television, comic books, etc. A familiar subject is frequently less overwhelming. Without comment, record class predictions on two different boards and later have the class try to think of the appropriate categories for them. You could also record predictions in the order suggested, explain "technological" and "sociological," and then have the class classify their predictions. Use the term "environment"; otherwise use whatever terms are suited to your class. You might start with extremely simple terms and later upgrade them, i.e., "machine" and "human." Then lead the conversation into the question of causation. Who will control the direction and pace of change? Refer to their examples. Work for categorical labels: "entrepreneur" or "businessman," "philosopher" or "thinker" (you may have to introduce this one), "media," "scientists," "politicians." Suggested questions are: What sort of world do you imagine by 2000 A.D.? If you were frozen now and revived in 2000, could you handle the environment? What do you want to be when you grow up? Will that job exist?

ACTIVITY B:
WHEN WE WERE YOUNG

Ask students to bring a picture or an old letter, poem, or song that their grandparents knew as children. Let the students react for a few minutes before noting how much change occurs within less than one lifetime.

Students may also interview older residents or relations with a tape recorder and replay the oral history for the class.

ACTIVITY C:
LIBRARY RESEARCH

Teacher's Note:
If your library is typical, there are simply not enough books for all the students to do futurology reports. You will need to work this out with your school and public librarian at least a week before beginning this unit.

Suggested topics are these:

Clothing Styles in the Future
Dating Styles in the Future
Family Life in the Future
The School of the Future
Jobs of the Future: Training and Retraining and Retraining
How Will We Be Governed in the Future?
The Home of the Future
Single Housing and Multiple Housing
Communication in the Future
Will You Be Relaxing More But Enjoying It Less?
Will Supper Be Served Out of a Pill Bottle?
Will Automobiles as We Know Them Be Obsolete Due to the Fuel Shortages?
How Computerized Will Our Lives Be in the Year 2000?

The above topics are only samples; there are an endless variety that can be studied by using the following:

a. Group or individual oral or written reports
b. Pictorial representations
c. Brief skits
d. Debates

ACTIVITY D:
PHONE OR LETTER INQUIRY

Teacher's Note:
Ideally these inquiries should be made as soon as possible and before the beginning of this unit.

Many companies have a person or department devoted to environmental planning. They are willing to discuss projected demands, plans for preserving the environment, possible employment trends, and ways in which businesses, now and in the future, can help employees cope. Do not overlook governmental agencies or political figures who might be willing to speak to your class. Questions should be supplied in advance, as an individual might not be prepared to speak on such a range of subjects.

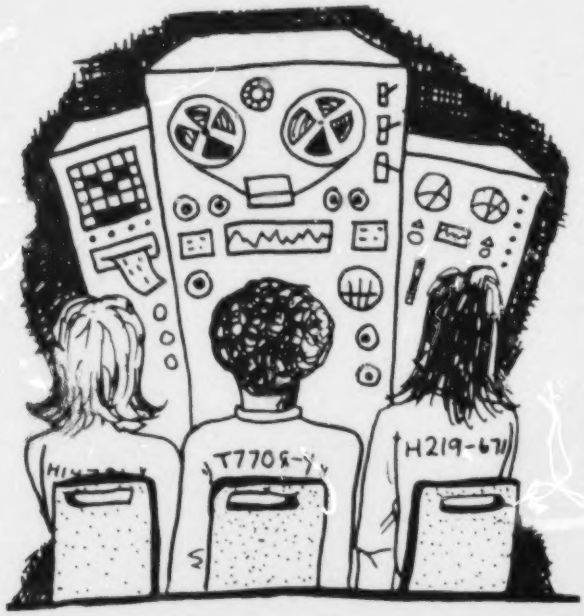
EXPERIENCE #2:
CHANGE RESULTS IN STRESS

OBJECTIVE:

The students will be able to understand that change frequently results in stress.

ACTIVITY A:

Subject the students to continuing, radical change. Totally change the classroom procedures, physical environment, and seating assignments. Work for total change of the classroom environment. This must be dramatic. Assign each student a complex number and do not call or refer to any student by name. After a majority of students have almost completed an assignment, announce that the school has purchased a new machine which will evaluate all written work. However, the machine can only be fed a certain form (computer cards or index cards), and the students will have to begin their assignment again.



Students *must* be involved in a stress-change situation or the unit is merely academic. At the point when students reach the greatest frustration, stop the activity and ask students to analyze their feelings about what has happened. Introduce the word "cope" in subsequent discussion.

ACTIVITY B: ROLE-PLAYING

1. Pre-research: Act out periods of great change that individuals in the class have experienced or that the class or teacher make up: death of the breadwinner, move to a faraway place, being affected by and located in a disaster area, changing schools, puberty, going to jail or court, breaking up with a boy or girl friend, divorce in the family, a new baby in the family, going on welfare, loss of the parents' jobs, etc.
2. Have the students, either individually or in small groups, research a topic that interests them or one that has affected them. Encourage them to seek ideas and suggestions which would allow for better adjustment if faced by the same or similar situations. Emphasize coping with change. The guidance counselor could and should be invited to participate in this activity as a resource problem.
3. Have the students role-play the ways they would cope with their researched situations.

ACTIVITY C: HOUSING GAME

Designate an area in which one student is to stand and complete a simple task, such as writing the alphabet. Continue to add students with the same task into the area. Continue adding people until there is frustration or it is impossible to add another person. At first, students will giggle; later they will usually become frustrated and irritated.

Follow up the exercise with a discussion about population growth and density. How does an individual function and cope with a situation where he or she is trying to be an individual in a large, impersonal mass of people?

ACTIVITY D: PROJECTION

Have every student write what stress he expects will result from changes made in the future. Possible topic suggestions:

1. Jobs that exist now becoming obsolete
2. Modes of transportation
3. Types of foods and their preparation (ex. microwave ovens, food in pill form, fresh vegetables and fruit in short supply, etc.)
4. Inability or unwillingness of society to control pollution
5. Increased governmental controls over the economy and personal lives
6. Continued population growth and poverty in under-developed countries
7. World wide shortage of natural resources
8. Greatly increased divorce rates and family instability
9. Possibility of high inflation rates, unemployment, and/or depression
10. World wide food shortage

ACTIVITY E: CHOICE VS. STRESS

Try to create a situation with almost unlimited choice. Give an assignment with sixteen options and no indication of which is preferable or have an average student stand in front of the class, and then tell him to speak on anything he wants for two minutes. Many students will be able to make an extemporaneous speech only if the teacher determines the subject.

ACTIVITY F: FUTURE SHOCK

Teacher's Note:
The content of the book, Future Shock, *may be too mature, objectionable or too difficult for your level of student. Preview it and if necessary get parental involvement or consent before presenting it to the class.*

Introduce and discuss the concept of "future shock." (Future Shock: the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time.[1] This stress can even result in physical illness.[2])

[1]Alvin Toffler. *Future Shock.* New York: Bantam Books, 1970, page 2.
[2]Ibid. Page 333.

EXPERIENCE #3: TECHNOLOGICAL CHANGES RESULTING IN SOCIOLOGICAL CHANGE

OBJECTIVE:

The student will understand that changes in technology will affect his life in many ways.

Teacher's Note:
This may be too mature for an average seventh or eighth grader, although some children would probably be able to handle it because of their experiences with relocating.

ACTIVITY A: CLASS DISCUSSION

(Rarely is one technological change directly responsible for a specific sociological change.)

1. Take each of the report subjects (as assigned in Activity C, Exp. 1) and consider the effects each would have on people's lives. Look for duplications and a trend. Anticipated technological trends might be an increased pace of life; computerization; automation; job retraining approximately every five years; more frequent relocation; increased growth of international corporations; increased accessibility of communications; increased speed and efficiency of transportation; less time on the job; more skill required for employment; and more forms of everything from energy to cars and food. The students, not the teacher, should note the duplication and hopefully come to the realization that many factors contribute to one social consequence. In order to help students figure out social consequences, questions should be direct and in personal terms: What would this do to your family? Could you remain married if your spouse had to move every five years? (Ask boys as well as girls.) Would you lose interest in your home if you had to move frequently? If it were structured just like everyone else's? How would the demand that your parents make of you change, if they were frequently moving and being retrained? How have technologically "improved" toys changed the way little children play?

2. Mention some sociological changes which may be increased in the future. Let the students figure out what factors are leading to these changes in people's relationships. Suggestions: communes, the increasing divorce rate, the lack of adoptable children, the increasing percentage of working women, the widespread drug/alcohol problem among teens and housewives, role definition, identifying people who all dress in spacesuits.

ACTIVITY B: ANALYSIS

Teacher's Note:
Group the students. Give each group a situation to analyze.

Have students analyze some of these or other situations: How will the students use their leisure time if they have only a three-day work week? How will students find meaning in their lives if their jobs consist of button pushing? How will the students maintain their capacities for love and affection if they move frequently and are far from any family members? When it becomes possible for everyone to participate in communication through small private papers or television stations, what subjects would they want to know or tell about? People learn to make and break friendships easily; do you feel your friendship has any real value?

ACTIVITY C: ROLE-PLAYING

Let students act out their reactions to a situation.

Situations:
A family reacts to the news of another move; a family reacts to the news that one of the adult children is moving to another planet; a couple reacts to their first U.F.O.; students react to news that they are being enrolled in a completely computerized school where they will have no classmates or human teachers; a class reacts to computerized, televised library with a receiver in each home for a nominal fee; a student is served seaweed and protein sticks; a person enters a mine and discovers thirty identical workers; two people are told they will not be granted a license to have a baby or adopt one because they failed the "good parents" test.

EXPERIENCE #4: ANTICIPATING CHANGE

OBJECTIVE:

Students will be able to anticipate change so that they may better cope with the changes.

Teacher's Note:
Taking into consideration current problems (energy crises, political crises, etc.) in our country, the possibilities for this activity are endless.

ACTIVITY A: PROPAGANDA CAMPAIGN

The students might present pictures, pamphlets, and television and radio commercials as propaganda campaigns which aim to create behavior patterns appropriate for predicted circumstances. Suggestions: be happy with fewer things (some futurists predict scarcity will seriously limit our productive capacity); have only two children; support metropolitan government; adopt grandparents if

yours are far away; make friends with spacepeople; accept into your home a television scanner assuring complete home security which will be viewed at the local police station; accept a new number system in which everyone will receive a number at birth which will be used for all identification (social security, school, credit) throughout life; enjoy mandatory education part-time until retirement age.

ACTIVITY B: PANEL DISCUSSION

Selected students would sit as a panel. Each would accept the role as a business person, scientist, politician, newsperson, or author. Students would then question the panel about their roles in preparing for the future and in helping the masses feel prepared. They could be asked about their roles in the energy crisis, pollution, or any of the predictions.

ACTIVITY C: CLASS DISCUSSION

Propose a situation and ask students who should have control over suggested problems such as energy, computerized information about private individuals, ocean ownership, uninhabited planets, an inhabited planet which is less technologically developed than that of its earth visitors, space station. Ask for a plan of control.

ACTIVITY D: EXTEMPORANEOUS SPEECHES

From the reports and discussions, teacher and students could fill a box with suggestions for speeches. Volunteers could then pick one of these and begin a short speech on the subject.

Suggestions: how to meet a spaceman, how to don space clothes, how to eat new foods, how to treat a robot, how to flirt while wearing a gas mask.

EXPERIENCE #5: THE FUTURE OF MAN

OBJECTIVE:

The student will understand that man may be a different animal as a result of scientific knowledge.

ACTIVITY A: DEFINITION

The class should attempt to define "man"; what makes man unique in the animal kingdom. Then consider the following possibilities for fundamentally changing man. Late in each subsequent discussion, the teacher should remind the students of their definition and question whether man will remain "man."

ACTIVITY B: PARENTING

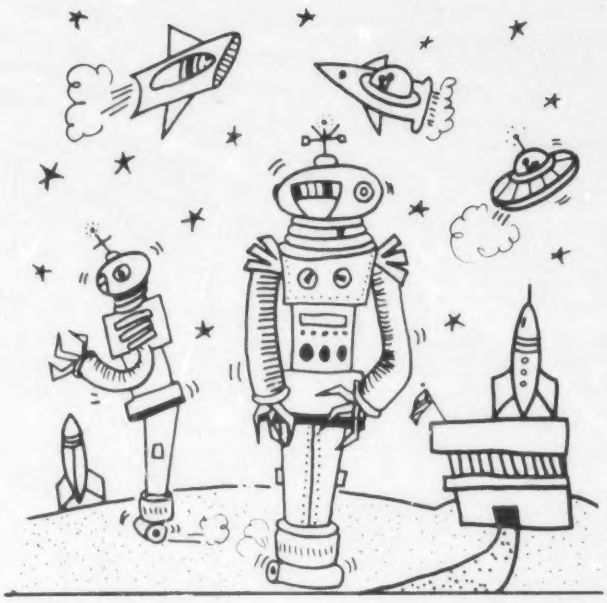
1. Have students write down the sex they would choose for their first baby. Compare answers. It may soon be possible to prevent the birth of any defective embryo and to choose the sex of a child. Would this class produce an all male society?
2. Appoint five students to the Commission for the Betterment of the Human Race. The class or teacher could then offer problems for the Commission to discuss such as The Ideal Community or The Ideal Person (in physical terms.)
3. Discuss the following question with the class. As the family becomes smaller (no longer including maiden aunts and grandparents) and more frequently dissolved, does the individual's capacity to love decrease?

ACTIVITY C: INSTANT HAPPINESS

Appoint a Board for Tranquility and Happiness. Their task is to prevent crime and unrest by giving any disturbed or disturbing person a "happy pill." When, and to whom, will the board dispense medicine? The class should then analyze its conclusions.

ACTIVITY D: MEDICAL ADVANCES

1. Have the class as a whole consider this question: If, through the use of chemicals or transplants, one could create a new animal, what would he create? Appoint the most excited students to the Board for the Improvement of the Species and let them continue, choosing the five most original animals. Let the class then consider the difficulties of directing scientific curiosity. How can it be controlled by people who do not understand the experiments?
2. How many students would like to have been a twin? Assign a student to report on cloning and allow class discussion.
3. How long would the students like to live? Medical advances could make their answers possible. An elderly person(s) might discuss with the class how attitudes and institutions need to adapt to increased life expectancy. Ask the class and guest whether they would consider being frozen and revived at a later time. What benefits and problems would extended life-expectancy create for future societies?



ACTIVITY E: ROBOTS

Teacher's Note:
This activity would be especially effective with seventh and eighth graders.

Read the following story aloud. Have the class write down which is the more advanced or progressive civilization, with a few brief reasons to justify their answer. It is hoped that the student will examine his values more conscientiously if he is committed to his choice. Before the papers are collected, it is important that the teacher make no indication of his opinion.

Story:
Once upon a time, a million years ago, a large spaceship burst upon a small blue and green planet. The natives bowed as the fiery capsule released three moving beings. These beings walked their separate ways until they had created a large safe triangular area. As they began humming, two more beings emerged from the craft. The natives bowed reverently to all five creatures, for they had no way of discerning that three of their new gods were robots. The robots did all of the physical labor for the invaders, and even a few of the routine and boring mental tasks. For a week, the spacemen studied the natives and transmitted their findings to their home planet. They were fascinated to discover that the natives still physically gave birth to their offspring, keeping even the defective ones. The space people had freed their women from that burden centuries before by growing their offspring in test tubes and hiring nurses to tend the "child-rearing centers." Thus, space people had doubled their capacity for continuing intellectual, scientific pursuits. By having each space person take a robot instead of a human mate, they had eliminated divorce and emotional stress; whereas the natives had no alternative but to live in their little huts with other natives. Another apalling situation to the spacemen was feeling hunger. Some natives constantly felt the pains of hunger. The spacemen would have shown the natives how to create synthetic food from the abundance of their environment, but they could find no native with the technological skill to understand. After satisfying the encyclopedic information bank and choosing two specimens from the interplanetary zoo, the spacemen reentered the spaceship. The robots locked the doors, secured the captives, and set the controls. On the screen of the interplanetary scanner, the spacemen could see the natives still bowing to their strange new gods, but some were crying.

After the students' conversation, compare the two civilizations.

Consider the following questions:

1. If man becomes able to relate more to machines than to other men, have we progressed or regressed? Have the students consider the advantages and disadvantages of robots as mates for themselves. Do the students know any people who would have enjoyed a wind-up toy more than a real baby? (Students may not use people's names.)
2. It is generally accepted that slavery is dehumanizing for the slave owner, for he loses much of his regard for human life and dignity. Would having robot mates be of the same principle?

EXPERIENCE #6: FREE MAN — WILL HE EXIST TOMORROW?

OBJECTIVE:
The students will be able to evaluate the idea of free man versus "automated" man in the world of tomorrow.

ACTIVITY A: PRIVACY IN AN AUTOMATED SOCIETY

1. (This situation must be set up well in advance. Five students must be told to give fictitious answers or to challenge the personal questions they will be asked. Six other students must be assigned the roles below and given the speeches to memorize.) At the beginning of the class period, ask personal questions of the prepared students, such as their criminal records, I.Q.'s, address and phone number, grade point average, family income, and whether the family receives welfare assistance. When challenged explain that you are going to set up your own file in the room. This will help in determining individual assignments and goals. Be adamant in your defense. Give a signal to the students playing roles when you want support for your side.

Employer: I have the right to a central file so that I can determine who is the best prospective employee. If we all use the file, we can save all that time wasted in applying and interviewing.

Police Psychologist: I need a complete history of every individual so that I can determine potential offenders before a crime is committed.

School Principal: I need access to the central file so that all the pupils may be properly educated, with attention paid to individual needs.

Religious Leader: I need information so that I may help my brother in his time of need.

Landlord: I need to protect my tenants from harmful or undesirable neighbors.

Neighbor: If I knew more about my neighbors, I could spot any trouble and come to their aid.

It is hoped that the class discussion will result in an opinion about the role of central information banks.

2. Drama

Students may write or perform a play about an accidental computer error or about malicious computer input.

ACTIVITY B: RIGHTS IN A MORE POPULATED SOCIETY

1. Essay or Debate — Which is more important, the right to have babies or the right to have space?
2. Is there a "right" to bread? to heat? to water? to sewage facilities? to auto fuel? Substitute subjects if desired. Group students and let each group draw up a rationing plan pertaining to the "right" selected.

ACTIVITY C: FREE SPEECH

(Some futurists predict that when the majority receive access to duplicating machinery, there will be tens of thousands of small publications started, one for every hobby or special interest). Make a box of ditto masters available to the class, with the instructions that anyone may write a newsletter and have thirty copies printed for a very nominal fee. Keep a copy of each, and discuss problems (distribution, libel, censorship, reliability, awesome amount of material, etc.) Project this on a national scale.

CULMINATING ACTIVITIES:

1. Oral Summary - Will it be a better world? (Do not draw rigid conclusions.)
2. Debate or panel presentation.
   a. As adults, we will live in a better world.
   b. The world is becoming so complicated that control of it should be given to the experts.
   c. The United States should accept its current spot in history and try to share the future with the rest of the world.
   d. Who will be the future servant, man or machine?

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Schools participating in the pilot program between February 1, 1974 and March 31, 1974

Akron City Schools
- Buchtel High School
- North High School
- Goodyear Junior High School
- Jennings Junior High School
- Kent Junior High School
- Perkins Junior High School

Chardon Local Schools
- Chardon High School
- Chardon Middle School

Cleveland Diocesan Schools
- Byzantine Catholic High School
- Cleveland Central Catholic
- Cathedral Latin High School
- Lake Catholic High School
- Notre Dame Academy
- St. Edward High School
- St. Joseph Franciscan School
- St. Justin Martyr
- St. Mary School
- St. Michael School
- St. Patrick School
- St. Richard School
- St. Rose School
- Trinity High School

Cleveland Heights/University Heights City Schools
- Heights High School
- Monticello Junior High School

Columbus City Schools
- Central High School
- Eastmoor Senior High School
- Linden McKinley High School
- Mohawk Senior High School
- North High School
- Eastmoor Junior High School
- Everett Junior High School
- Linmoor Junior High School
- Starling Junior High School
- Yorktown Junior High School

Euclid City Schools
- Euclid Senior High School
- Forest Park Junior High School
- Shore Junior High School

Geneva Area City Schools
- Geneva Area Senior High School
- Geneva Area Junior High School

Kirtland Local Schools
- Kirtland High School

Ledgemont Local Schools
- Ledgemont High School

Madison Local Schools
- Madison High School
- Memorial Middle School
- Red Bird Middle School

Mayfield City Schools
- Mayfield High School

Painesville Local Schools
- Riverside High School

Perry Local Schools
- Perry High School

West Geauga Local Schools
- West Geauga Junior High School

Willoughby-Eastlake City Schools
- North High School
- Kennedy Junior High School
- Willowick Junior High School

Youngstown City Schools
- North High School
- Haynes Junior High School
- Hillman Junior High School
- Princetown Junior High School

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